AV Receiver

Service
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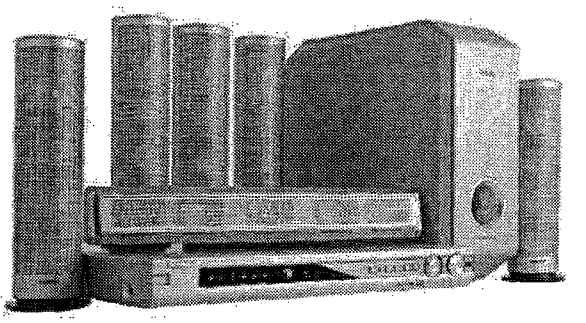

Service Manual

DOLBY DIGITAL • EX PRO LOGIC II

DIGITAL dts SURROUND

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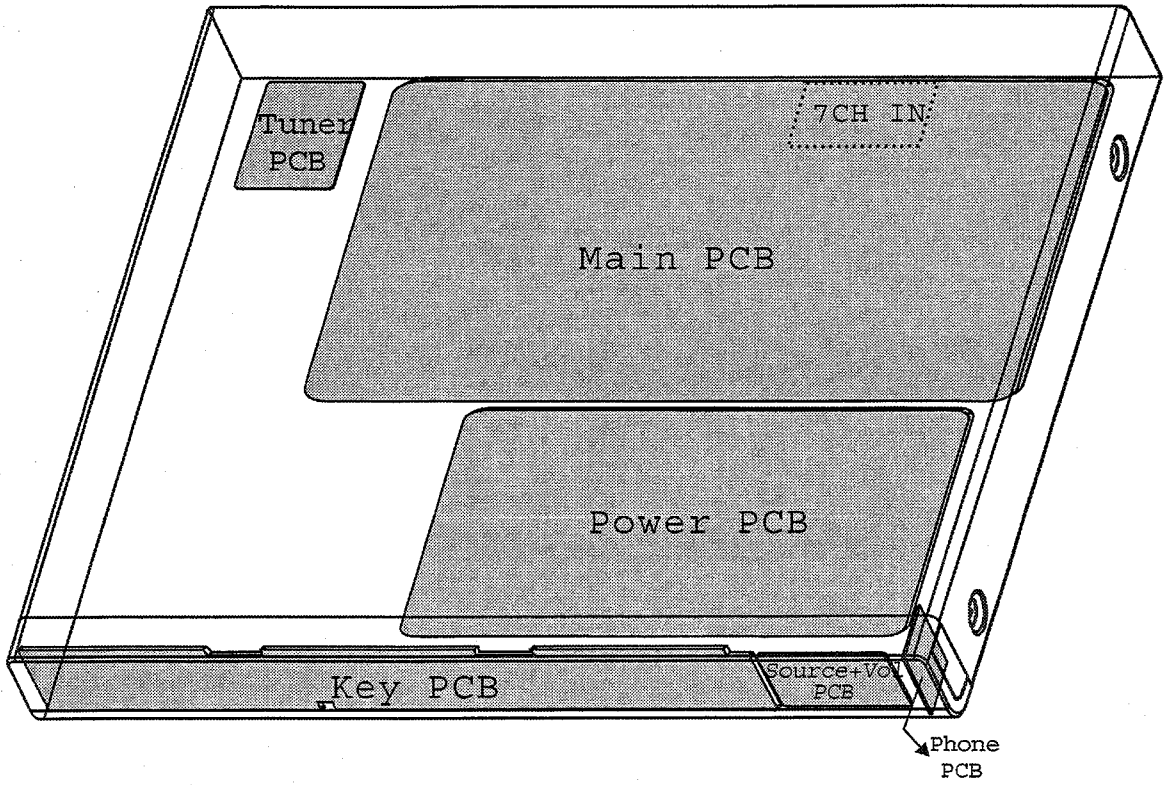
GB 3139 785 30640

Version 1.0

PHILIPS

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type/Versions Features & Board in used	LX710 / 01
RDS function	x
Grid Switch	
Line Cord (Detachable)	x
Line Cord (Fixed)	
AC Voltage (110V~127V / 220~240V)	
AC Voltage (220V~240V)	x

SPECIFICATIONS

AMPLIFIER SECTION

Power output	
- Front	75W RMS / channel
- Rear	75W RMS / channel
- Center	75W RMS
Frequency Response	200 HZ - 20 kHz / -3 dB
- Subwoofer	150W RMS
Frequency Response	10 HZ - 200 kHz
Signal-to-Noise Ratio	> 60 dB (CCIR)
Input Sensitivity	
- TV In	400 mV
- AUX In	400 mV
- 7 Channel In	800 mV

TUNER SECTION

Tuning Range	FM 87.5-108 MHz (50 kH steps)
	MW531 - 1602 kHz (9kHz steps)
26 dB Quieting Sensitivity	FM 22 dBf
	5 uV / m
Signal-to-Noise Ratio	FM 55 dB
	MW 40 dB
Harmonic Distortion	FM Mono 3%
	FM Stereo 3%
	MW5%
Frequency Response	FM 180 Hz-10kHz/±6 dB
Stereo Separation	FM 26 dB(1 kHz)
Stereo threshold	FM 23.5 dB

MAIN UNIT

Power Supply Rating	220-240V; 50Hz (for / 01)
Power Supply Rating	110-127/ 220-240V; 50/60Hz Switchable (for / 69)
Power Consumption	180 W
Dimensions (w x h x d)	435mm x 54mm x 388mm
Weight	4.16 kg

SPEAKERS

Front Speakers / Rear (surround) speaker	
System	2-way. closed box system
Impedance	3W
Speaker drivers	18mm cone dome tweeter
Frequency response	150 Hz - 20 kHz
Dimensions (w x h x d)	93mm x 169mm x 65mm
Weight	0.75 Kg / each

CENTER SPEAKER

System	2-way. closed box system
Impedance	3W
Speaker drivers	18mm cone dome tweeter
Frequency response	150 Hz - 20 kHz
Dimensions (w x h x d)	245mm x 93mm x 70mm
Weight	1.37 Kg

PASSIVE SUBWOOFER

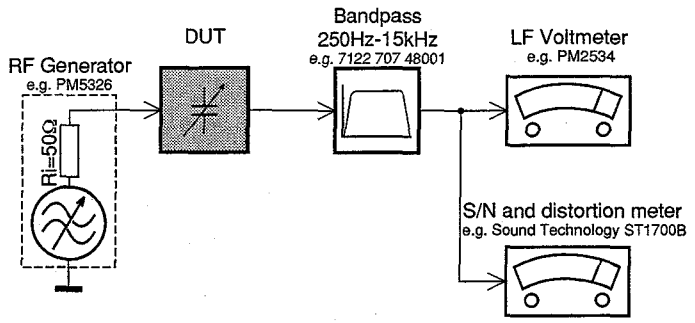
Frequency response	30 Hz - 150 kHz
Dimensions (w x h x d)	156mm x 350mm x 360mm

TUNER AREA:

AREA	BAND	FREQUENCY (Hz)		STEP(Hz)
EUROPE	FM	87.5M	108M	50K
	MW	531K	1602K	9K
LATAM	FM	87.5M	108M	50K
	MW	530K	1710K	10K

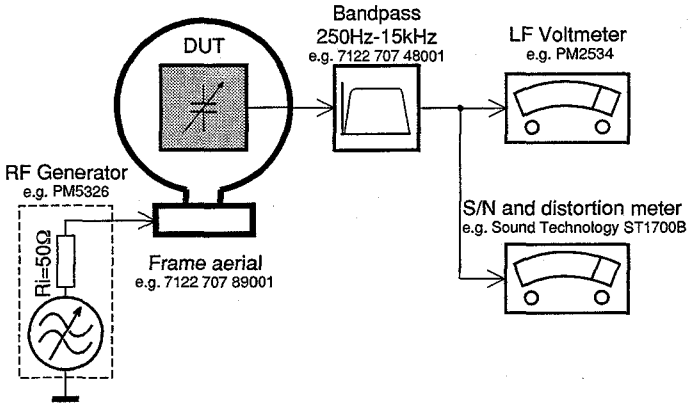
MEASUREMENT SETUP

Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

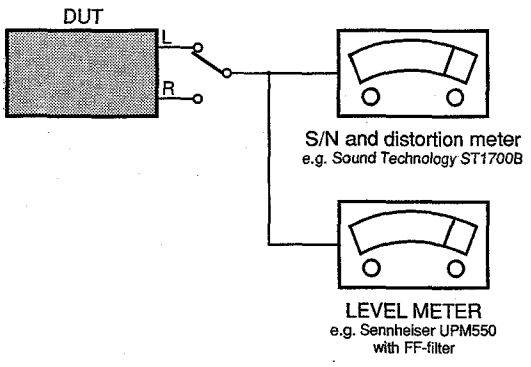
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

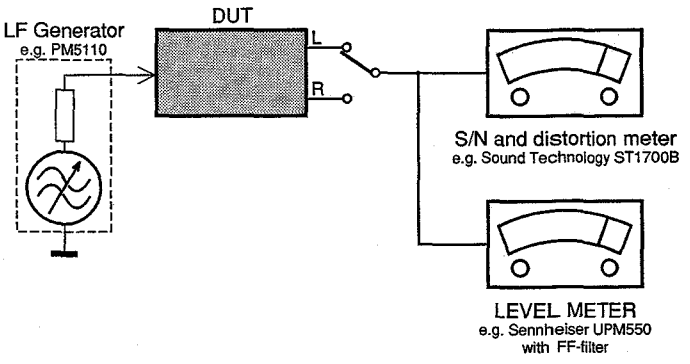
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



SERVICE AIDS

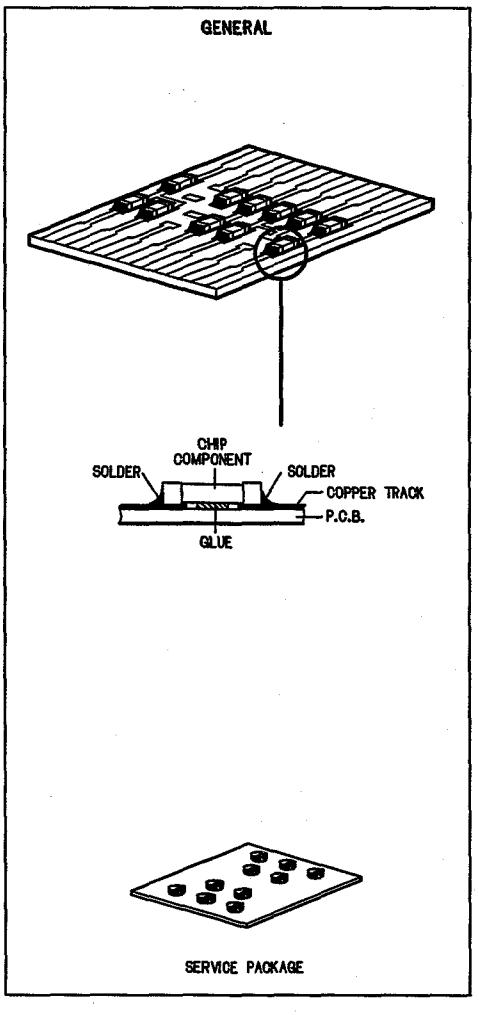
Service Tools:

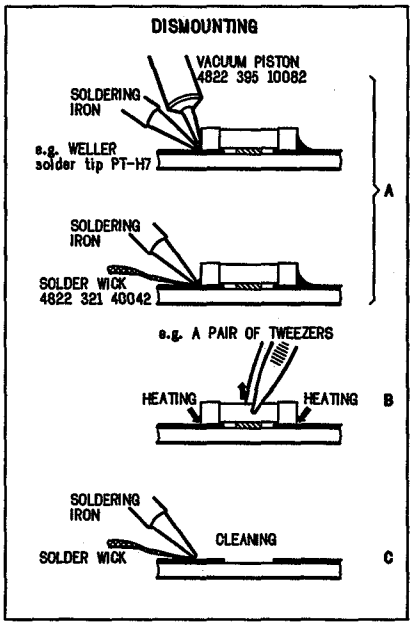
Universal Torx driver holder 4822 395 91019
Torx bit T10 150mm 4822 395 50456
Torx driver set T6-T20 .....4822 395 50145
Torx driver T10 extended 4822 395 50423

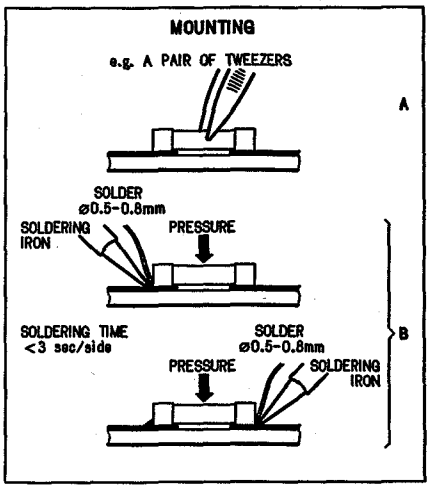
Compact Disc:

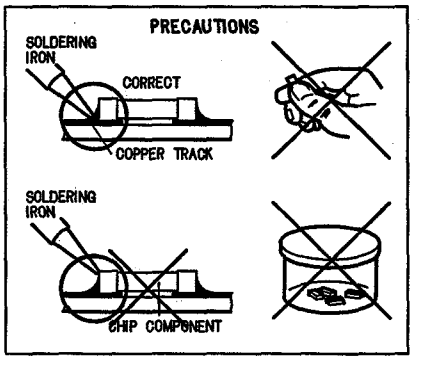
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

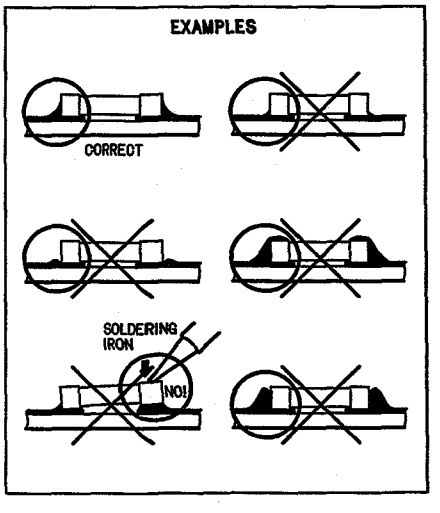
HANDLING CHIP COMPONENTS











ESD

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB) ESD PROTECTION EQUIPMENT

Complete Kit ESD3 (small tablemat, wristband, connection box, estention cable and earth cable 4822 310 10671
Wristband tester 4822 344 13999

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.
Safety components are marked by the symbol ⚠ .

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
De Veiligheidsonderdelen zijn aangeduid met het symbol ⚠ .

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.
Less composants de sécurité sont marqués ⚠ .

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.
Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.
Componenty di sicurezza sono marcati con ⚠ .

(GB)
After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist, The leakage current must not exceed 0.5mA.

(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

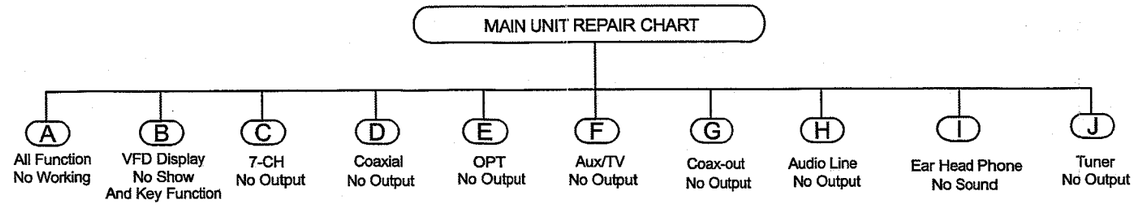
(DK) Advarse !

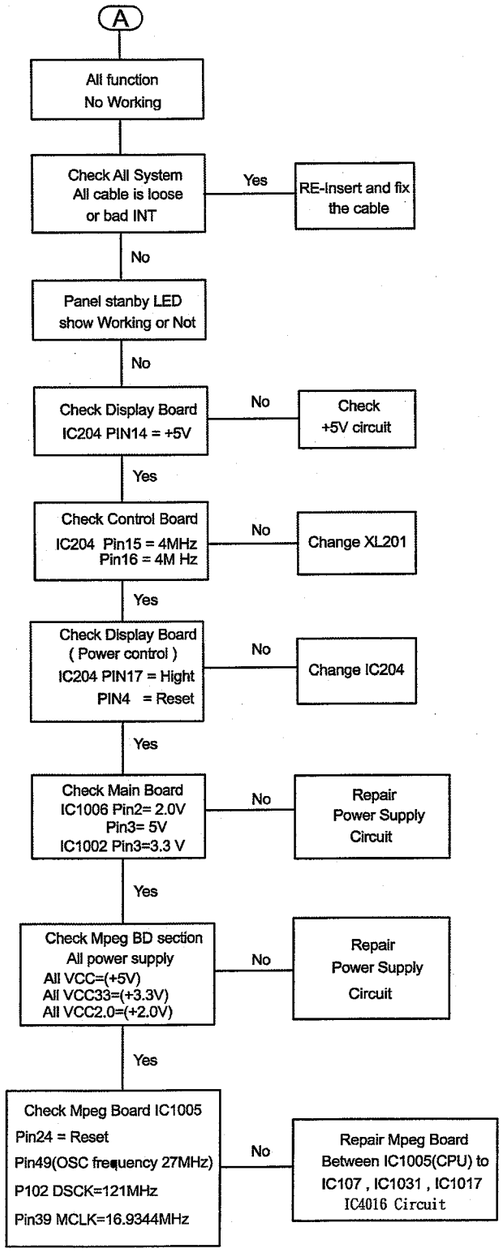
Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

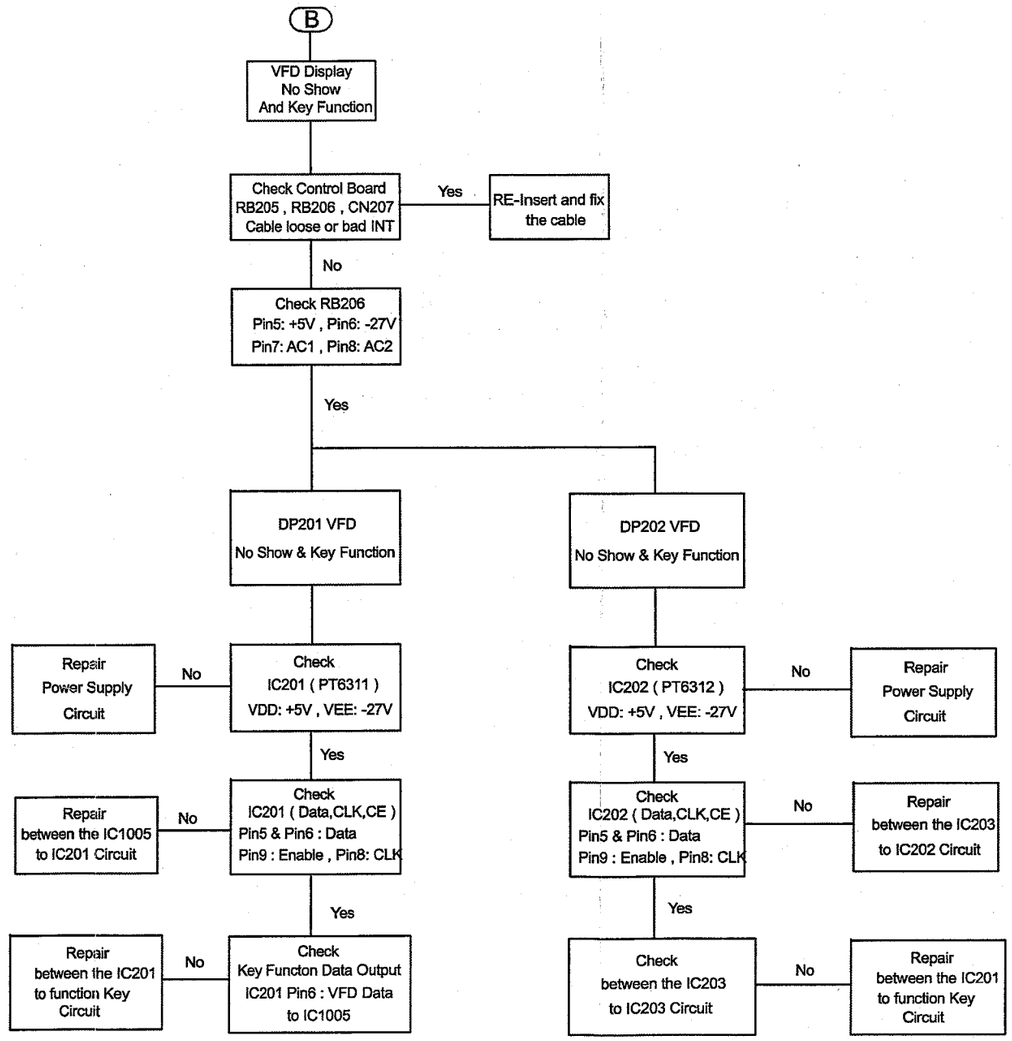
(F)
"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

2-1

REPAIR INSTRUCTION

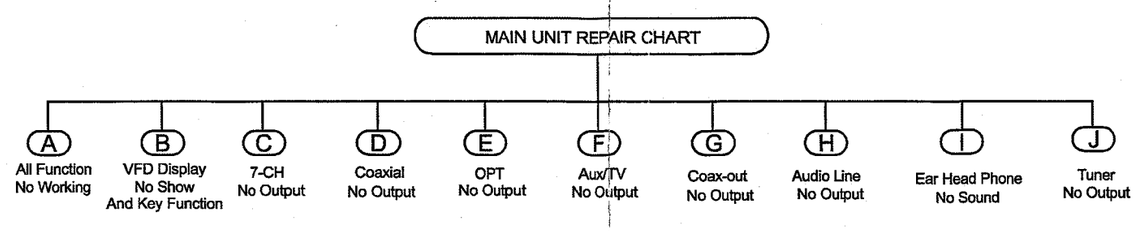


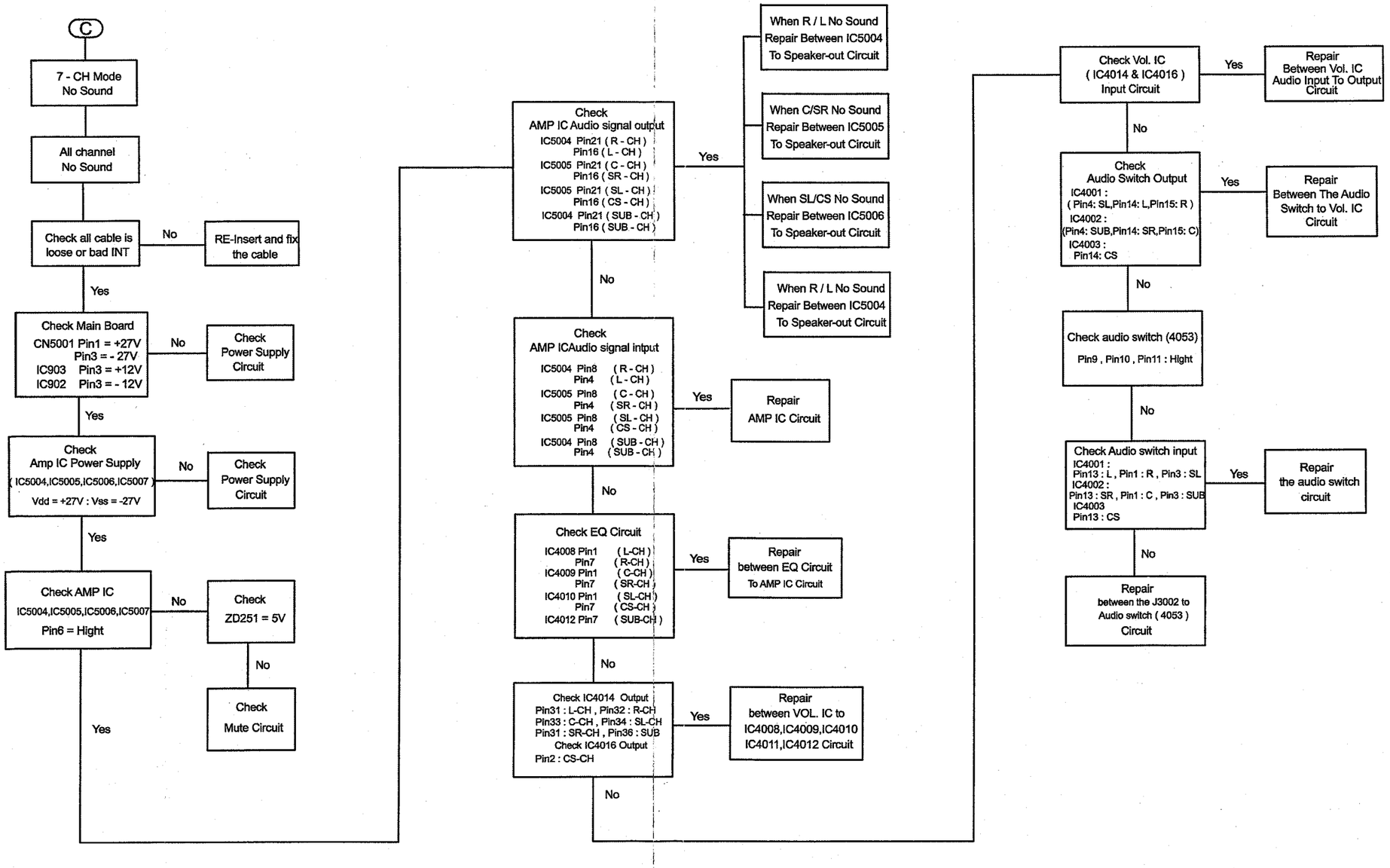




2-2

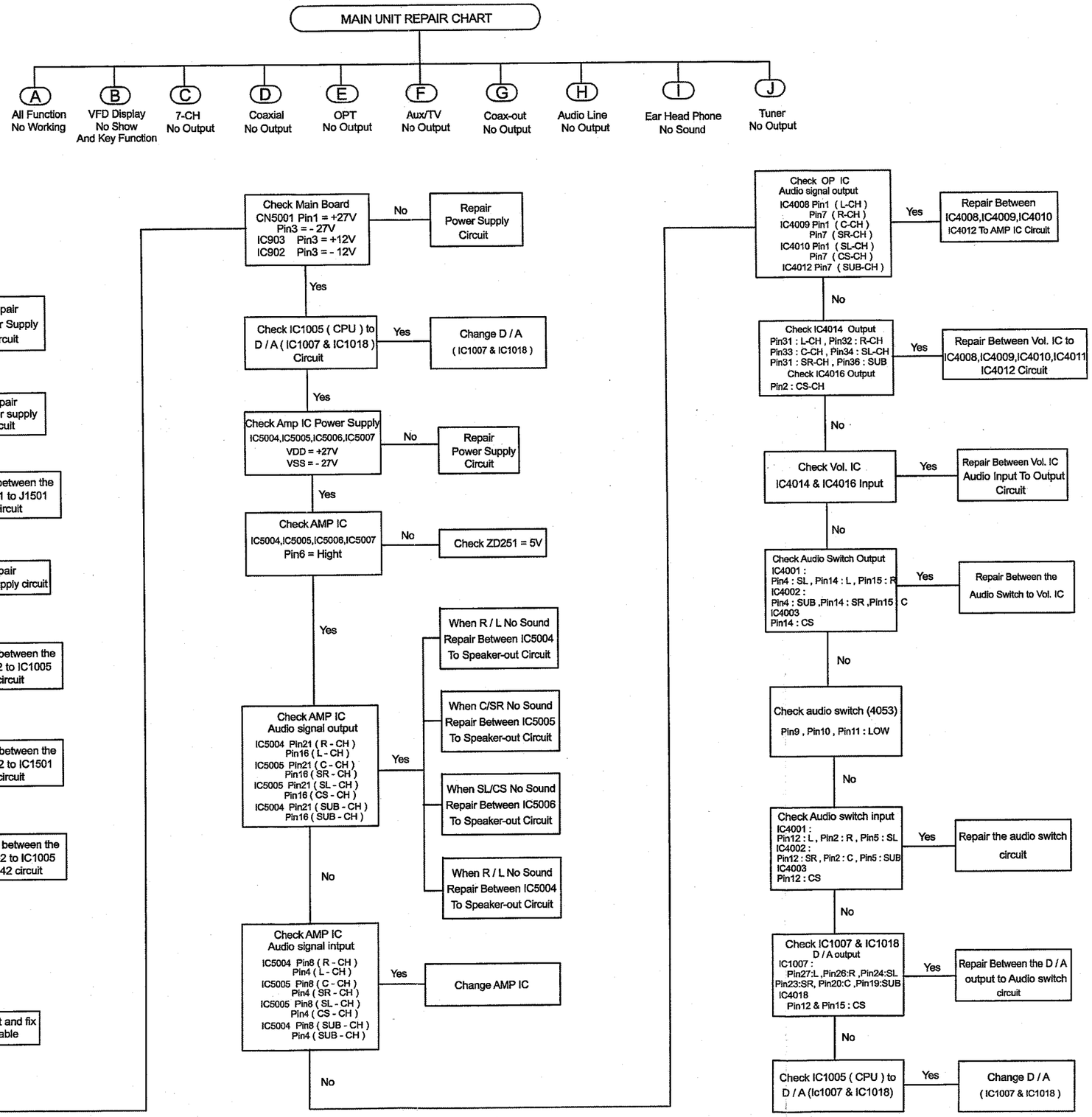
REPAIR INSTRUCTION





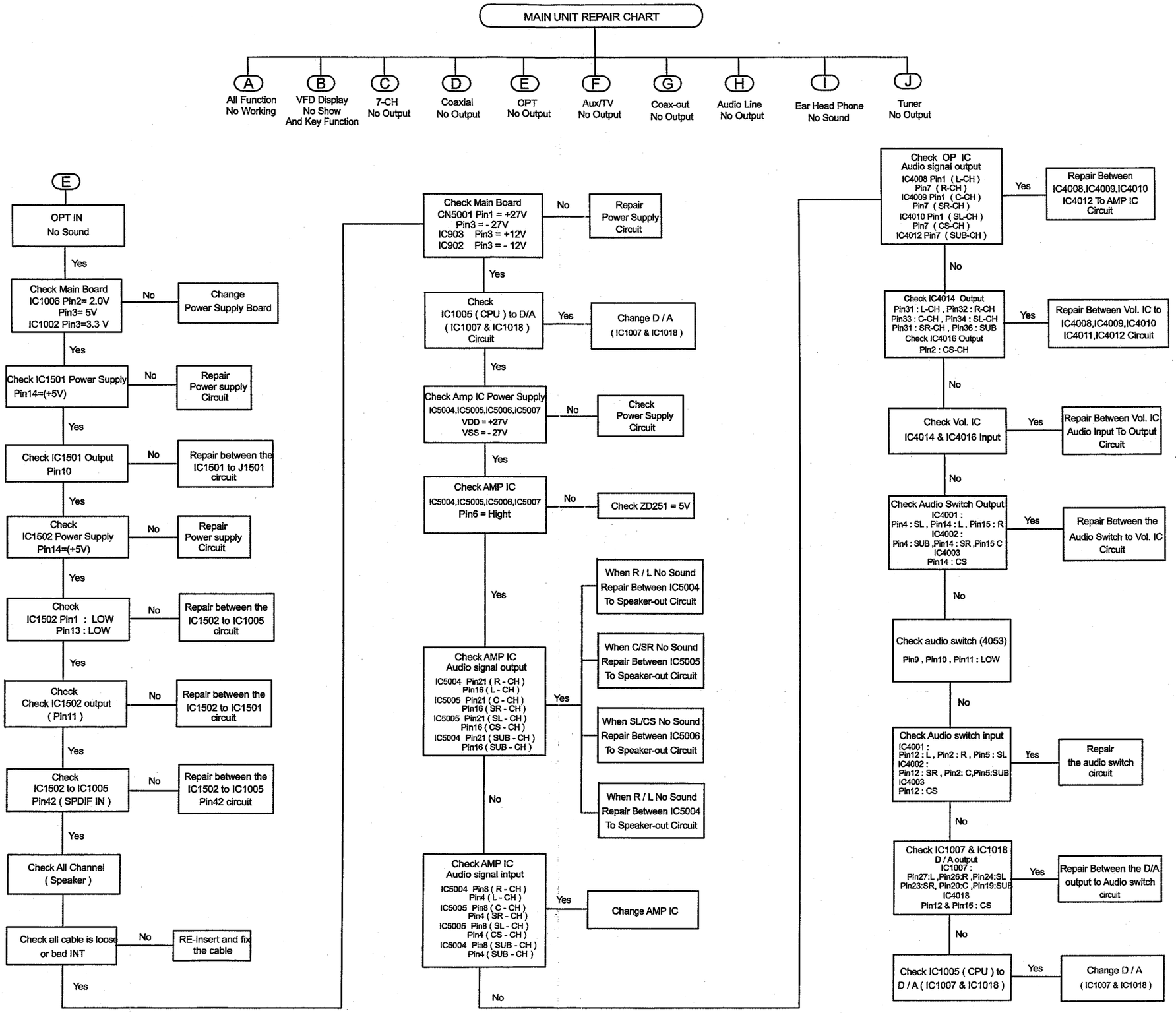
2-3

REPAIR INSTRUCTION


MAIN UNIT REPAIR CHART
A
All Function No Working
B
VFD Display No Show And Key Function
C
7-CH No Output
D
Coaxial No Output
E
OPT No Output
F
Aux/TV No Output
G
Coax-out No Output
H
Audio Line No Output
I
Ear Head Phone No Sound
J
Tuner No Output
D
Coaxial in No Sound
Yes
Check Main Board IC1006 Pin2= 2.0V Pin3= 5V IC1002 Pin3=3.3 V
No
Repair Power Supply Circuit
Yes
Check IC1501 Power Supply Pin14=(+5V)
No
Repair Power supply Circuit
Yes
Check IC1501 Output (Pin4)
No
Repair between the IC1501 to J1501 circuit
Yes
Check IC1502 Power Supply Pin14=(+5V)
No
Repair Power supply circuit
Yes
Check IC1502 Pin4 : LOW Pin13 : LOW
No
Repair between the IC1502 to IC1005 circuit
Yes
Check Check IC1502 output Pin11 Circuit
No
Repair between the IC1502 to IC1501 circuit
Yes
Check IC1502 to IC1005 Pin42 (SPDIF IN)
No
Repair between the IC1502 to IC1005 Pin42 circuit
Yes
Check All Channel (Speaker)
Check all cable is loose or bad INT
No
RE-Insert and fix the cable
Yes
Check Main Board CN5001 Pin1 = +27V Pin3 = - 27V IC903 Pin3 = +12V IC902 Pin3 = - 12V
No
Repair Power Supply Circuit
Yes
Check IC1005 (CPU) to D / A (IC1007 & IC1018) Circuit
Yes
Change D / A (IC1007 & IC1018)
Yes
Check Amp IC Power Supply IC5004,IC5005,IC5006,IC5007 VDD = +27V VSS = - 27V
No
Repair Power Supply Circuit
Yes
Check AMP IC IC5004,IC5005,IC5006,IC5007 Pin6 = Hight
No
Check ZD251 = 5V
Yes
Check AMP IC Audio signal output IC5004 Pin21 (R - CH) Pin16 (L - CH) IC5005 Pin21 (C - CH) Pin16 (SR - CH) IC5005 Pin21 (SL - CH) Pin16 (CS - CH) IC5004 Pin21 (SUB - CH) Pin16 (SUB - CH)
Yes
When R / L No Sound Repair Between IC5004 To Speaker-out Circuit
When C/SR No Sound Repair Between IC5005 To Speaker-out Circuit
When SL/CS No Sound Repair Between IC5006 To Speaker-out Circuit
When R / L No Sound Repair Between IC5004 To Speaker-out Circuit
No
Check AMP IC Audio signal intput IC5004 Pin8 (R - CH) Pin4 (L - CH) IC5005 Pin8 (C - CH) Pin4 (SR - CH) IC5005 Pin8 (SL - CH) Pin4 (CS - CH) IC5004 Pin8 (SUB - CH) Pin4 (SUB - CH)
Yes
Change AMP IC
No
Check OP IC Audio signal output IC4008 Pin1 (L-CH) Pin7 (R-CH) IC4009 Pin1 (C-CH) Pin7 (SR-CH) IC4010 Pin1 (SL-CH) Pin7 (CS-CH) IC4012 Pin7 (SUB-CH)
Yes
Repair Between IC4008,IC4009,IC4010 IC4012 To AMP IC Circuit
No
Check IC4014 Output Pin31 : L-CH , Pin32 : R-CH Pin33 : C-CH , Pin34 : SL-CH Pin31 : SR-CH , Pin36 : SUB Check IC4016 Output Pin2 : CS-CH
Yes
Repair Between Vol. IC to IC4008,IC4009,IC4010,IC4011 IC4012 Circuit
No
Check Vol. IC IC4014 & IC4016 Input
Yes
Repair Between Vol. IC Audio Input To Output Circuit
No
Check Audio Switch Output IC4001 : Pin4 : SL , Pin14 : L , Pin15 : R IC4002 : Pin4 : SUB ,Pin14 : SR ,Pin15 : C IC4003 Pin14 : CS
Yes
Repair Between the Audio Switch to Vol. IC
No
Check audio switch (4053) Pin9 , Pin10 , Pin11 : LOW
No
Check Audio switch input IC4001 : Pin12 : L , Pin2 : R , Pin5 : SL IC4002 : Pin12 : SR , Pin2 : C , Pin5 : SUB IC4003 Pin12 : CS
Yes
Repair the audio switch circuit
No
Check IC1007 & IC1018 D / A output IC1007 : Pin27:L ,Pin26:R ,Pin24:SL Pin23:SR, Pin20:C ,Pin19:SUB IC4018 Pin12 & Pin15 : CS
Yes
Repair Between the D / A output to Audio switch circuit
No
Check IC1005 (CPU) to D / A (Ic1007 & IC1018)
Yes
Change D / A (IC1007 & IC1018)

2-4

REPAIR INSTRUCTION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Coaxial No Output
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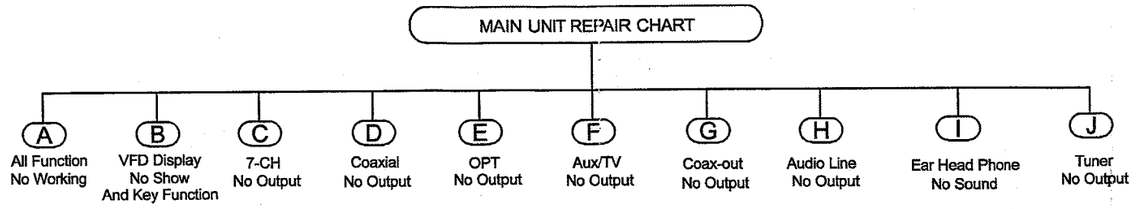
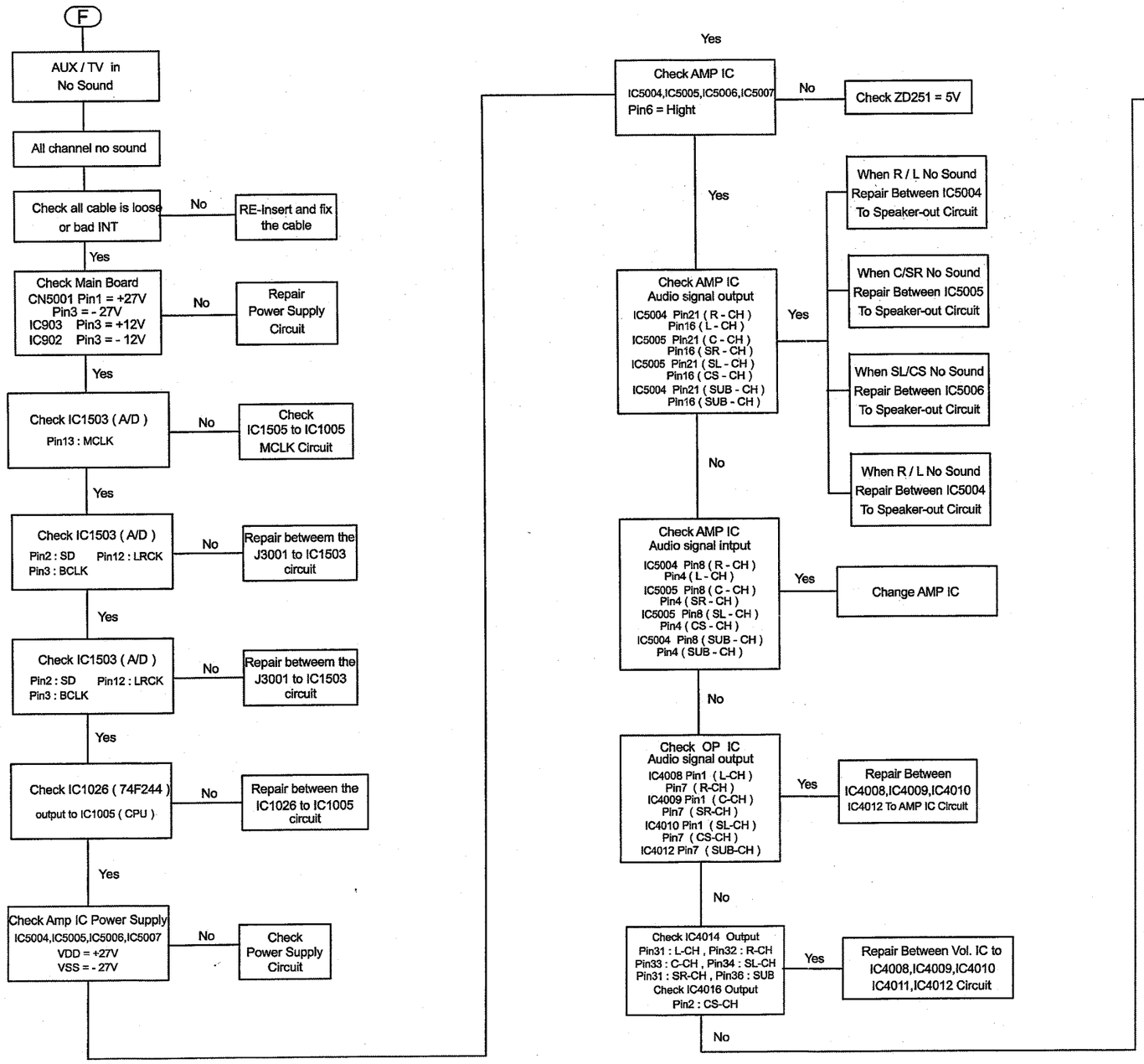
OPT No Output
F
Aux/TV No Output
G
Coax-out No Output
H
Audio Line No Output
I
Ear Head Phone No Sound
J
Tuner No Output
E
OPT IN No Sound
Yes
Check Main Board IC1006 Pin2= 2.0V Pin3= 5V IC1002 Pin3=3.3 V
No
Change Power Supply Board
Yes
Check IC1501 Power Supply Pin14=(+5V)
No
Repair Power supply Circuit
Yes
Check IC1501 Output Pin10
No
Repair between the IC1501 to J1501 circuit
Yes
Check IC1502 Power Supply Pin14=(+5V)
No
Repair Power supply Circuit
Yes
Check IC1502 Pin1 : LOW Pin13 : LOW
No
Repair between the IC1502 to IC1005 circuit
Yes
Check Check IC1502 output (Pin11)
No
Repair between the IC1502 to IC1501 circuit
Yes
Check IC1502 to IC1005 Pin42 (SPDIF IN)
No
Repair between the IC1502 to IC1005 Pin42 circuit
Yes
Check All Channel (Speaker)
Check all cable is loose or bad INT
No
RE-Insert and fix the cable
Yes
Check Main Board CN5001 Pin1 = +27V Pin3 = - 27V IC903 Pin3 = +12V IC902 Pin3 = - 12V
No
Repair Power Supply Circuit
Yes
Check IC1005 (CPU) to D/A (IC1007 & IC1018) Circuit
Yes
Change D / A (IC1007 & IC1018)
Yes
Check Amp IC Power Supply IC5004,IC5005,IC5006,IC5007 VDD = +27V VSS = - 27V
No
Check Power Supply Circuit
Yes
Check AMP IC IC5004,IC5005,IC5006,IC5007 Pin6 = Hight
No
Check ZD251 = 5V
Yes
Check AMP IC Audio signal output IC5004 Pin21 (R - CH) Pin16 (L - CH) IC5005 Pin21 (C - CH) Pin16 (SR - CH) IC5005 Pin21 (SL - CH) Pin16 (CS - CH) IC5004 Pin21 (SUB - CH) Pin16 (SUB - CH)
Yes
When R / L No Sound Repair Between IC5004 To Speaker-out Circuit
When C/SR No Sound Repair Between IC5005 To Speaker-out Circuit
When SL/CS No Sound Repair Between IC5006 To Speaker-out Circuit
When R / L No Sound Repair Between IC5004 To Speaker-out Circuit
No
Check AMP IC Audio signal intput IC5004 Pin8 (R - CH) Pin4 (L - CH) IC5005 Pin8 (C - CH) Pin4 (SR - CH) IC5005 Pin8 (SL - CH) Pin4 (CS - CH) IC5004 Pin8 (SUB - CH) Pin4 (SUB - CH)
Yes
Change AMP IC
No
Check OP IC Audio signal output IC4008 Pin1 (L-CH) Pin7 (R-CH) IC4009 Pin1 (C-CH) Pin7 (SR-CH) IC4010 Pin1 (SL-CH) Pin7 (CS-CH) IC4012 Pin7 (SUB-CH)
Yes
Repair Between IC4008,IC4009,IC4010 IC4012 To AMP IC Circuit
No
Check IC4014 Output Pin31 : L-CH , Pin32 : R-CH Pin33 : C-CH , Pin34 : SL-CH Pin31 : SR-CH , Pin36 : SUB Check IC4016 Output Pin2 : CS-CH
Yes
Repair Between Vol. IC to IC4008,IC4009,IC4010 IC4011,IC4012 Circuit
No
Check Vol. IC IC4014 & IC4016 Input
Yes
Repair Between Vol. IC Audio Input To Output Circuit
No
Check Audio Switch Output IC4001 : Pin4 : SL , Pin14 : L , Pin15 : R IC4002 : Pin4 : SUB ,Pin14 : SR ,Pin15 C IC4003 Pin14 : CS
Yes
Repair Between the Audio Switch to Vol. IC Circuit
No
Check audio switch (4053) Pin9 , Pin10 , Pin11 : LOW
No
Check Audio switch input IC4001 : Pin12 : L , Pin2 : R , Pin5 : SL IC4002 : Pin12 : SR , Pin2: C,Pin5:SUB IC4003 Pin12 : CS
Yes
Repair the audio switch circuit
No
Check IC1007 & IC1018 D / A output IC1007 : Pin27:L ,Pin26:R ,Pin24:SL Pin23:SR, Pin20:C ,Pin19:SUB IC4018 Pin12 & Pin15 : CS
Yes
Repair Between the D/A output to Audio switch circuit
No
Check IC1005 (CPU) to D / A (IC1007 & IC1018)
Yes
Change D / A (IC1007 & IC1018)

2-5

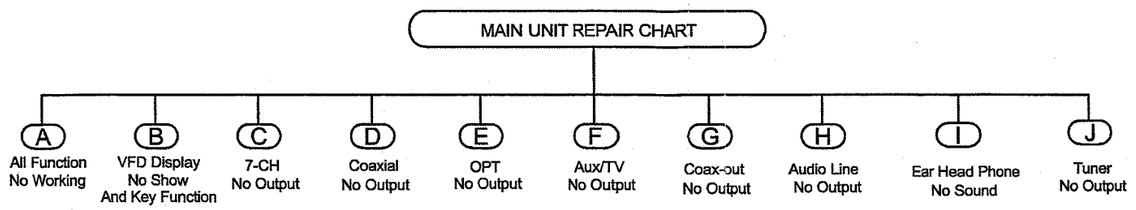
REPAIR INSTRUCTION

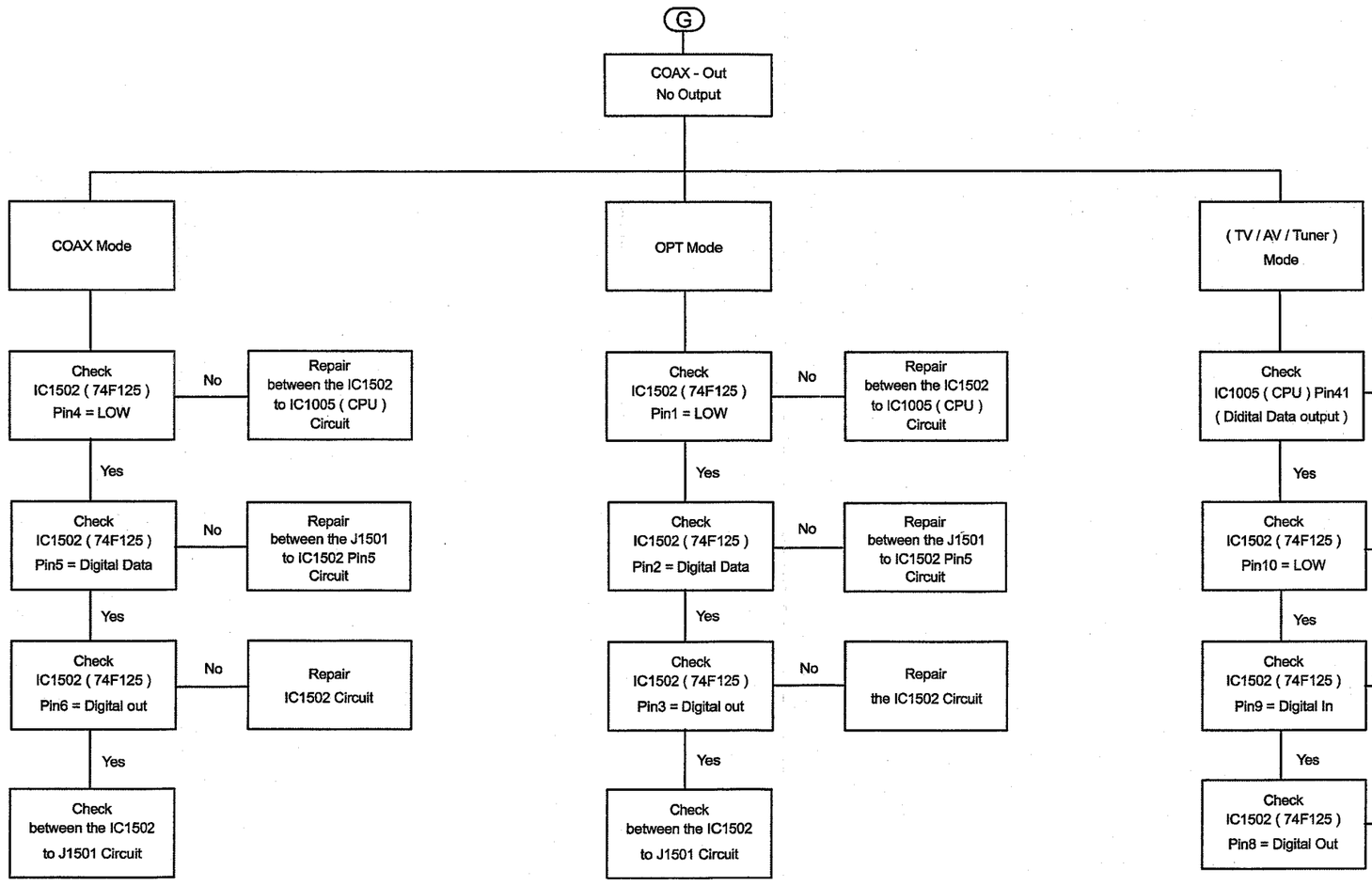



F
AUX / TV in No Sound
All channel no sound
Check all cable is loose or bad INT
No
RE-Insert and fix the cable
Yes
Check Main Board
CN5001 Pin1 = +27V
Pin3 = - 27V
IC903 Pin3 = +12V
IC902 Pin3 = - 12V
No
Repair Power Supply Circuit
Yes
Check IC1503 (A/D)
Pin13 : MCLK
No
Check IC1505 to IC1005 MCLK Circuit
Yes
Check IC1503 (A/D)
Pin2 : SD Pin12 : LRCK
Pin3 : BCLK
No
Repair betweem the J3001 to IC1503 circuit
Yes
Check IC1503 (A/D)
Pin2 : SD Pin12 : LRCK
Pin3 : BCLK
No
Repair betweem the J3001 to IC1503 circuit
Yes
Check IC1026 (74F244)
output to IC1005 (CPU)
No
Repair between the IC1026 to IC1005 circuit
Yes
Check Amp IC Power Supply
IC5004,IC5005,IC5006,IC5007
VDD = +27V
VSS = - 27V
No
Check Power Supply Circuit
Yes
Check AMP IC
IC5004,IC5005,IC5006,IC5007
Pin6 = Hight
No
Check ZD251 = 5V
Yes
Check AMP IC
Audio signal output
IC5004 Pin21 (R - CH)
Pin16 (L - CH)
IC5005 Pin21 (C - CH)
Pin16 (SR - CH)
IC5005 Pin21 (SL - CH)
Pin16 (CS - CH)
IC5004 Pin21 (SUB - CH)
Pin16 (SUB - CH)
Yes
When R / L No Sound
Repair Between IC5004
To Speaker-out Circuit
When C/SR No Sound
Repair Between IC5005
To Speaker-out Circuit
When SL/CS No Sound
Repair Between IC5006
To Speaker-out Circuit
When R / L No Sound
Repair Between IC5004
To Speaker-out Circuit
No
Check AMP IC
Audio signal intput
IC5004 Pin8 (R - CH)
Pin4 (L - CH)
IC5005 Pin8 (C - CH)
Pin4 (SR - CH)
IC5005 Pin8 (SL - CH)
Pin4 (CS - CH)
IC5004 Pin8 (SUB - CH)
Pin4 (SUB - CH)
Yes
Change AMP IC
No
Check OP IC
Audio signal output
IC4008 Pin1 (L-CH)
Pin7 (R-CH)
IC4009 Pin1 (C-CH)
Pin7 (SR-CH)
IC4010 Pin1 (SL-CH)
Pin7 (CS-CH)
IC4012 Pin7 (SUB-CH)
Yes
Repair Between IC4008,IC4009,IC4010
IC4012 To AMP IC Circuit
No
Check IC4014 Output
Pin31 : L-CH , Pin32 : R-CH
Pin33 : C-CH , Pin34 : SL-CH
Pin31 : SR-CH , Pin36 : SUB
Check IC4016 Output
Pin2 : CS-CH
Yes
Repair Between Vol. IC to IC4008,IC4009,IC4010 IC4011,IC4012 Circuit
No
Check Vol. IC
IC4014 & IC4016 Input
Yes
Repair Between Vol. IC Audio Input To Output Circuit
No
Check Audio Switch Output
IC4001 :
Pin4 : SL , Pin14 : L , Pin15 : R
IC4002 :
Pin4: SUB,Pin14: SR,Pin15 :C
IC4003
Pin14 : CS
Yes
Repair Between the Audio Switch to Vol. IC
No
Check audio switch (4053)
Pin9 , Pin10 , Pin11 : LOW
No
Check Audio switch input
IC4001 :
Pin12 : L , Pin2 : R , Pin5 : SL
IC4002 :
Pin12: SR, Pin2: C , Pin5: SUB
IC4003
Pin12 : CS
Yes
Repair the audio switch circuit
No
Check IC1007 & IC1018
D / A output
IC1007 :
Pin27:L ,Pin26:R ,Pin24:SL
Pin23:SR, Pin20:C ,Pin19:SUB
IC4018
Pin12 & Pin15 : CS
Yes
Repair Between the D/A output to Audio switch circuit
No
Check IC1005 (CPU) to D / A (IC1007 & IC1018) Circuit
Yes
Change D / A (IC1007 & IC1018)
Check IC1005 (CPU) to D / A (IC1007 & IC1018) Circuit
Yes
Change D / A (IC1007 & IC1018)

2-6

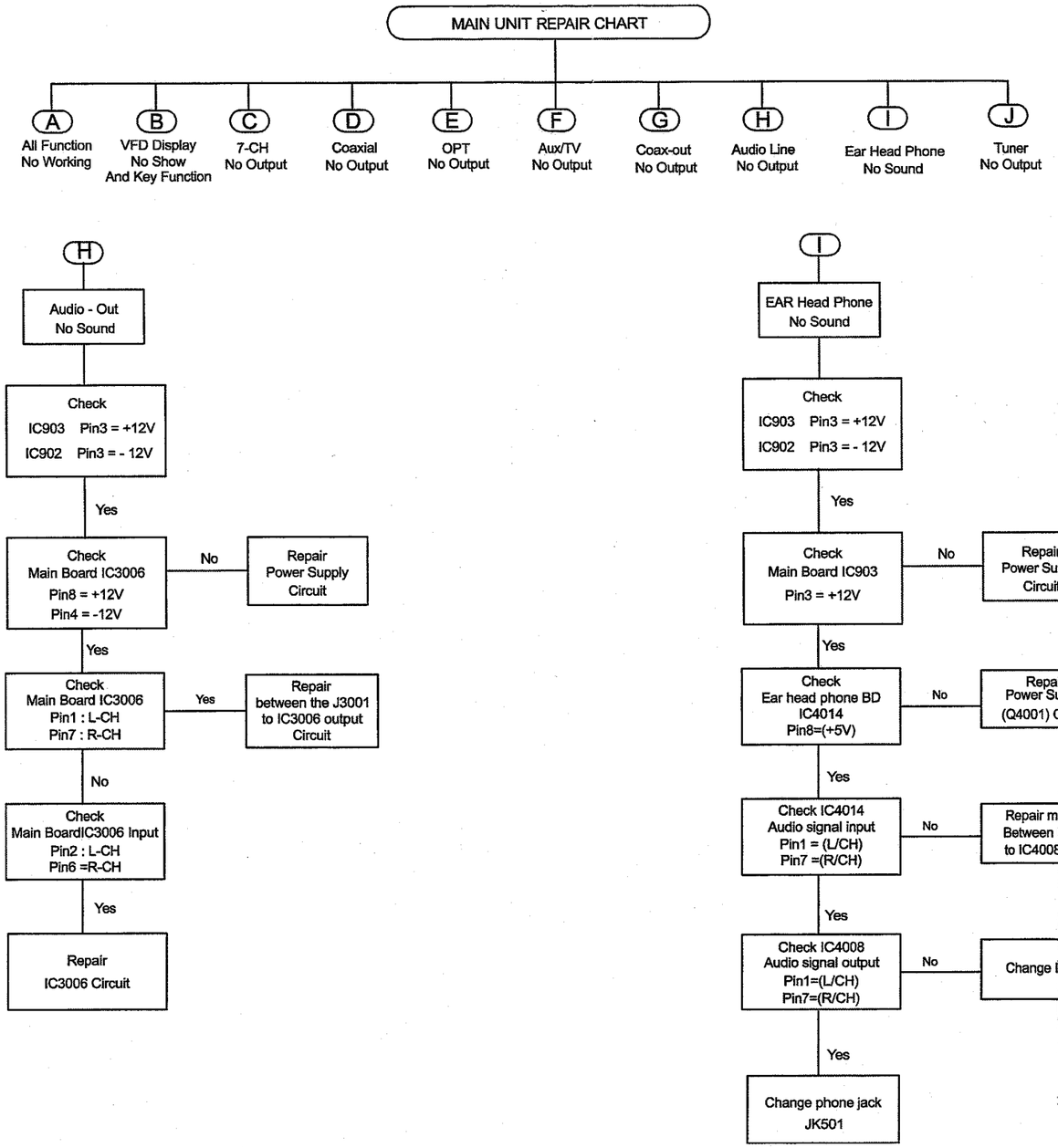
REPAIR INSTRUCTION




G
COAX - Out No Output
COAX Mode
Check IC1502 (74F125) Pin4 = LOW
No
Repair between the IC1502 to IC1005 (CPU) Circuit
Yes
Check IC1502 (74F125) Pin5 = Digital Data
No
Repair between the J1501 to IC1502 PIn5 Circuit
Yes
Check IC1502 (74F125) Pin6 = Digital out
No
Repair IC1502 Circuit
Yes
Check between the IC1502 to J1501 Circuit
OPT Mode
Check IC1502 (74F125) Pin1 = LOW
No
Repair between the IC1502 to IC1005 (CPU) Circuit
Yes
Check IC1502 (74F125) Pin2 = Digital Data
No
Repair between the J1501 to IC1502 Pin5 Circuit
Yes
Check IC1502 (74F125) Pin3 = Digital out
No
Repair the IC1502 Circuit
Yes
Check between the IC1502 to J1501 Circuit
(TV / AV / Tuner) Mode
Check IC1005 (CPU) Pin41 (Didital Data output)
No
Repair the IC1005 Circuit
Yes
Check IC1502 (74F125) Pin10 = LOW
No
Repair between theIC1005 to IC1502 Pin10 Circuit
Yes
Check IC1502 (74F125) Pin9 = Digital In
No
Repair between the IC1502 Pin9 toIC1005 Pin41 Circuit
Yes
Check IC1502 (74F125) Pin8 = Digital Out
No
Repair between the IC1502 to J1501 (COAX-Out) Circuit

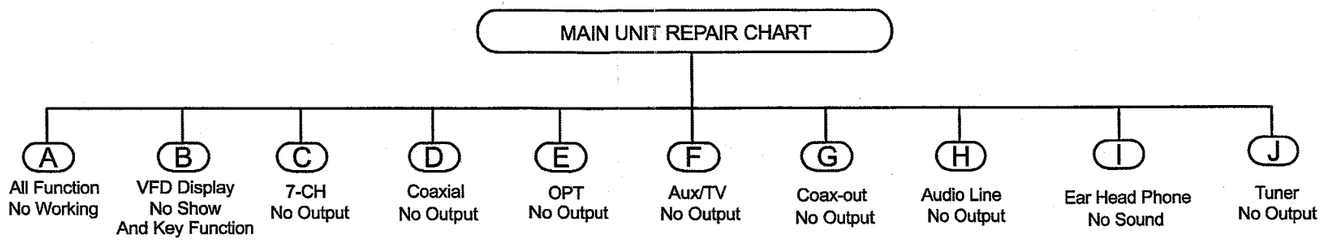
2-7

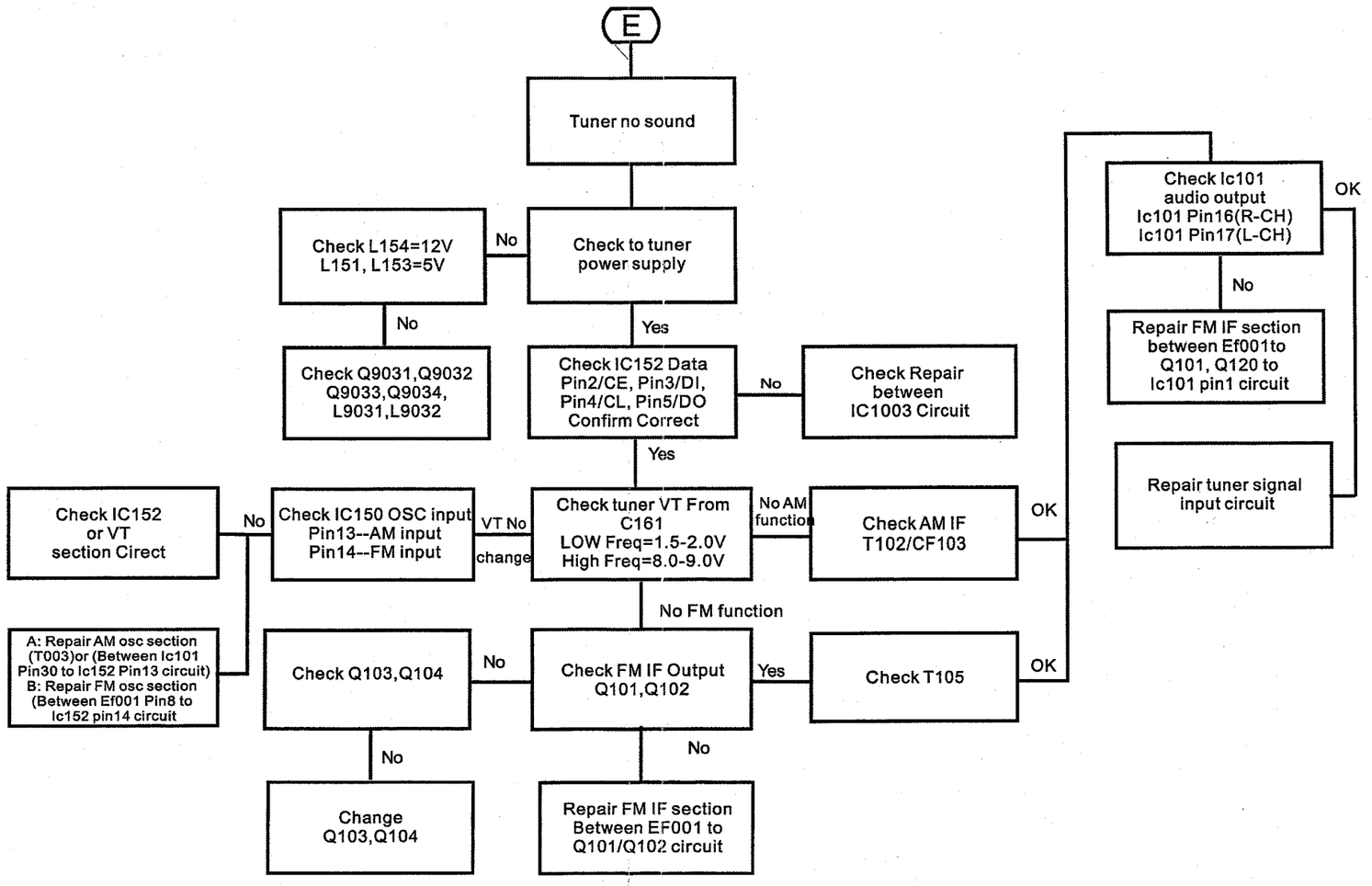
REPAIR INSTRUCTION



2-8

REPAIR INSTRUCTION

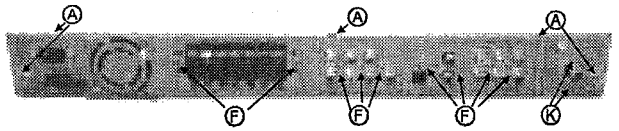



E
Tuner no sound
Check L154=12V L151, L153=5V
No
Check to tuner power supply
No
Yes
Check Q9031,Q9032 Q9033,Q9034, L9031,L9032
Check IC152 Data Pin2/CE, Pin3/DI, Pin4/CL, Pin5/DO Confirm Correct
No
Check Repair between IC1003 Circuit
Yes
Check IC152 or VT section Cirect
No
Check IC150 OSC input Pin13--AM input Pin14--FM input
VT No change
Check tuner VT From C161 LOW Freq=1.5-2.0V High Freq=8.0-9.0V
No AM function
Check AM IF T102/CF103
OK
No FM function
A: Repair AM osc section (T003)or (Between Ic101 Pin30 to Ic152 Pin13 circuit) B: Repair FM osc section (Between Ef001 Pin8 to Ic152 pin14 circuit
Check Q103,Q104
No
Check FM IF Output Q101,Q102
Yes
Check T105
OK
No
No
Change Q103,Q104
Repair FM IF section Between EF001 to Q101/Q102 circuit
Check Ic101 audio output Ic101 Pin16(R-CH) Ic101 Pin17(L-CH)
OK
No
Repair FM IF section between Ef001to Q101, Q120 to Ic101 pin1 circuit
Repair tuner signal input circuit

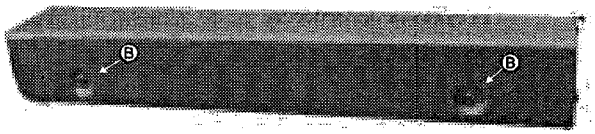
DISASSEMBLY INSTRUCTIONS

1) Loosen 9 screws and remove the Top Cover by lifting the rear portion upwards before sliding it out towards the rear.
   - 5 screws "A" on the back as shown in figure 1.
   - 2 screws "B" each on the left & right side as shown in figure 2.

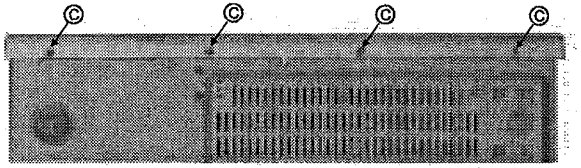
2) Loosen 6 screws & lift up the top edge of Front Panel assembly to free some catches before sliding it out towards the front.
   - 4 screws "C" on the bottom as shown in figure 3.
   - 1 screw "D" each on the left & right side as shown in figure 4.



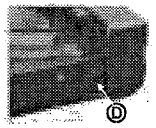
< Figure 1 >



< Figure 2 >



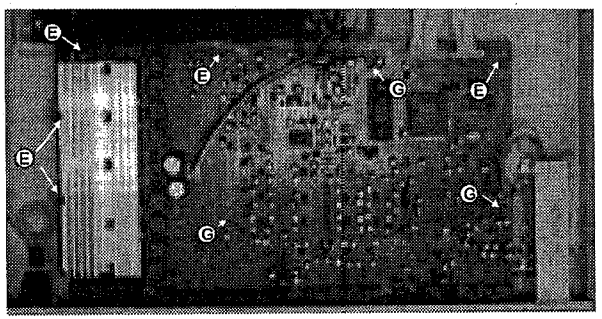
< Figure 3 >



< Figure 4 >

Dismantling of the Main Board

1) Loosen 5 screws "E" on the top of main board as shown in figure 5.
2) Loosen 9 screws "F" at the back panel as shown in figure 1.
3) Loosen 3 plastic stand-off "G" on the top of main board as shown in figure 5.

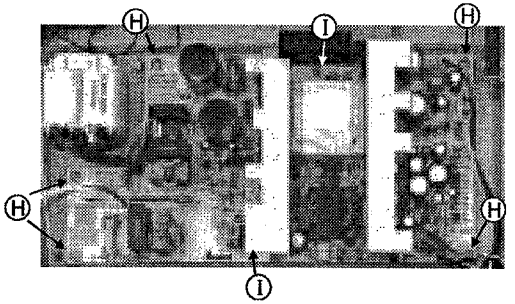


< Figure 5 >

3-1

Dismantling of the PowerBoard

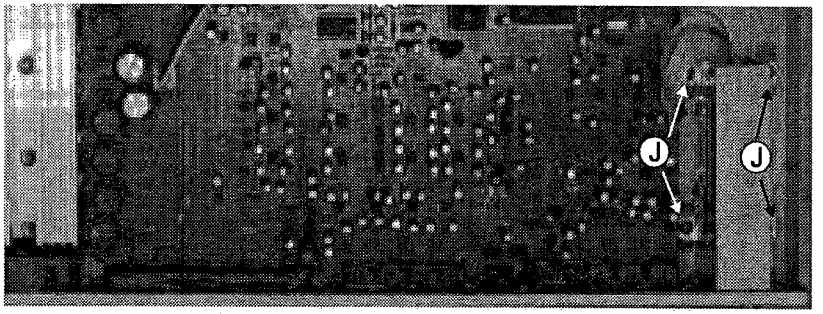
1) Loosen 5 screws "H" on the top of power board as shown in figure 6.
2) Loosen 2 plastic stand-off "I" at on the top of main board as shown in figure 6.



< Figure 6 >

Dismantling of the Tuner Board

1) Loosen 4 screws "J" on the top of tuner board as shown in figure 7.
2) Loosen 2 screws "K" at the back panel as shown in figure 1.

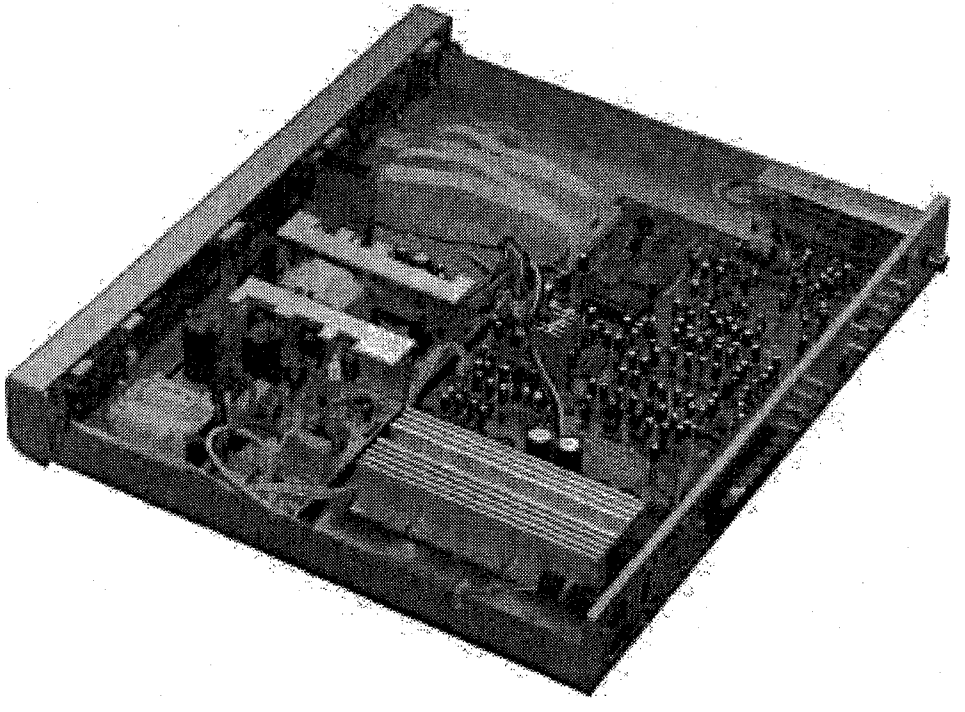


< Figure 7 >

3-2

SERVICE POSITIONS

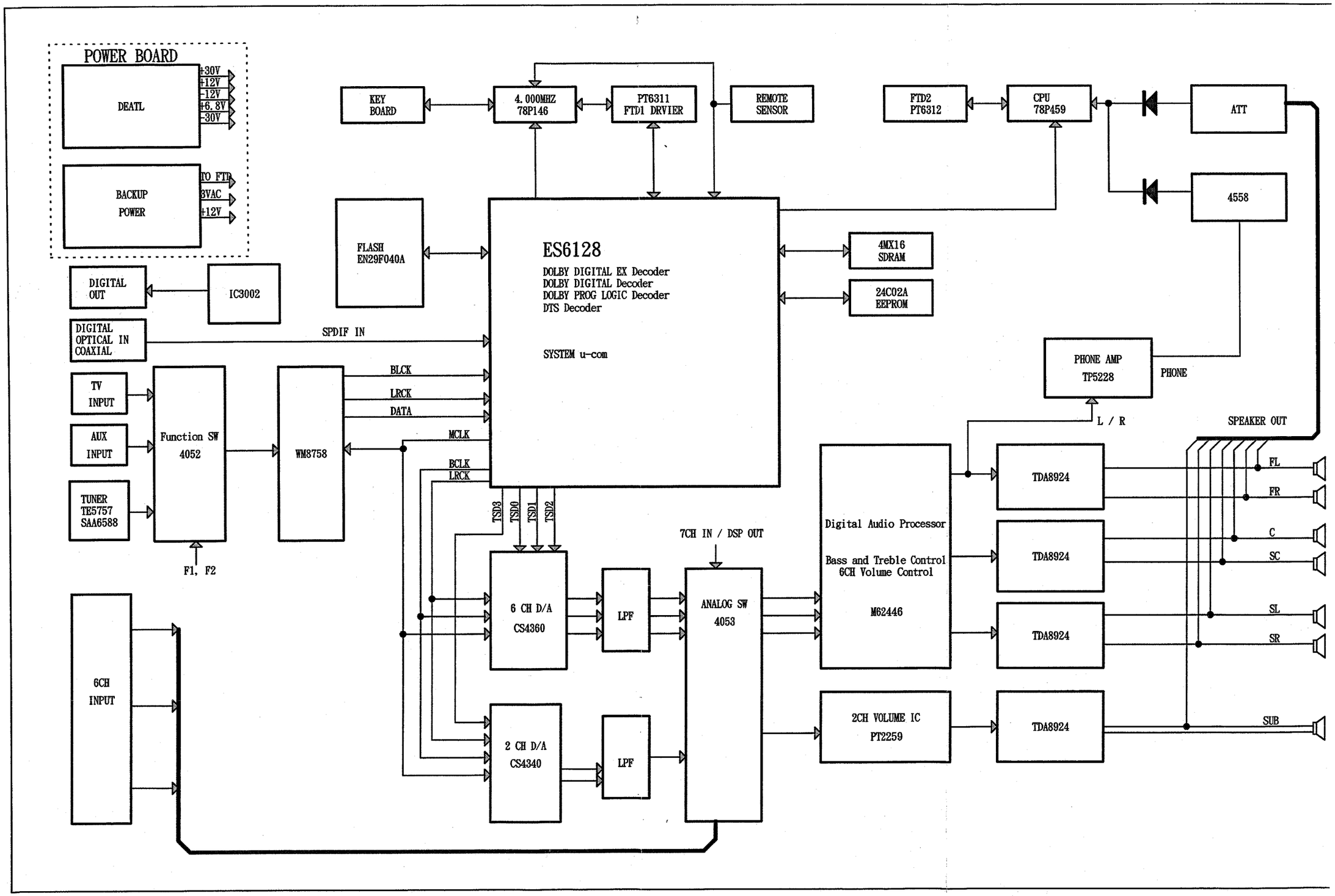
Service position A



Service position B

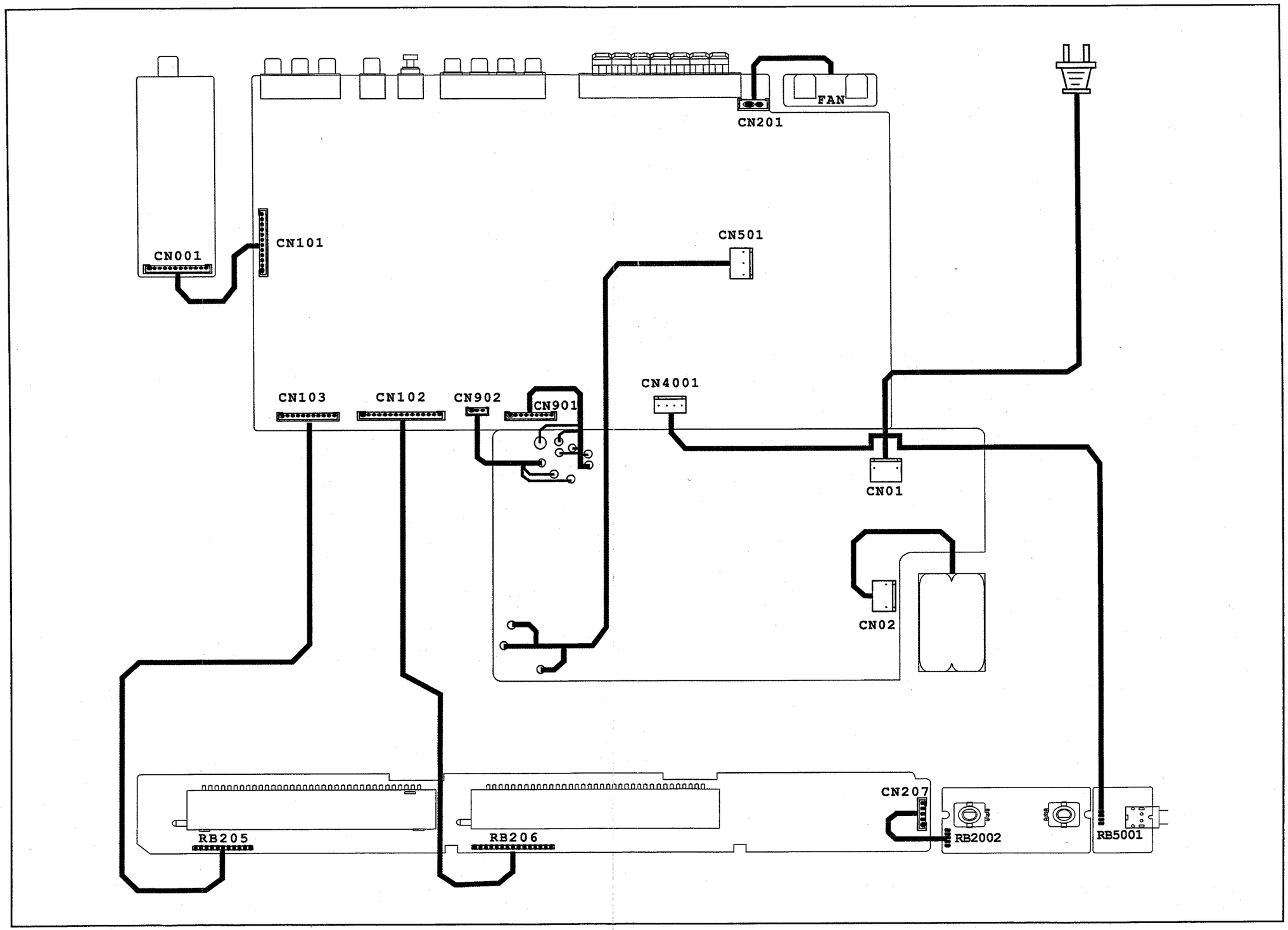
4-1

BLOCK DIAGRAM



4-2

WIRING DIAGRAM



MAIN BOARD

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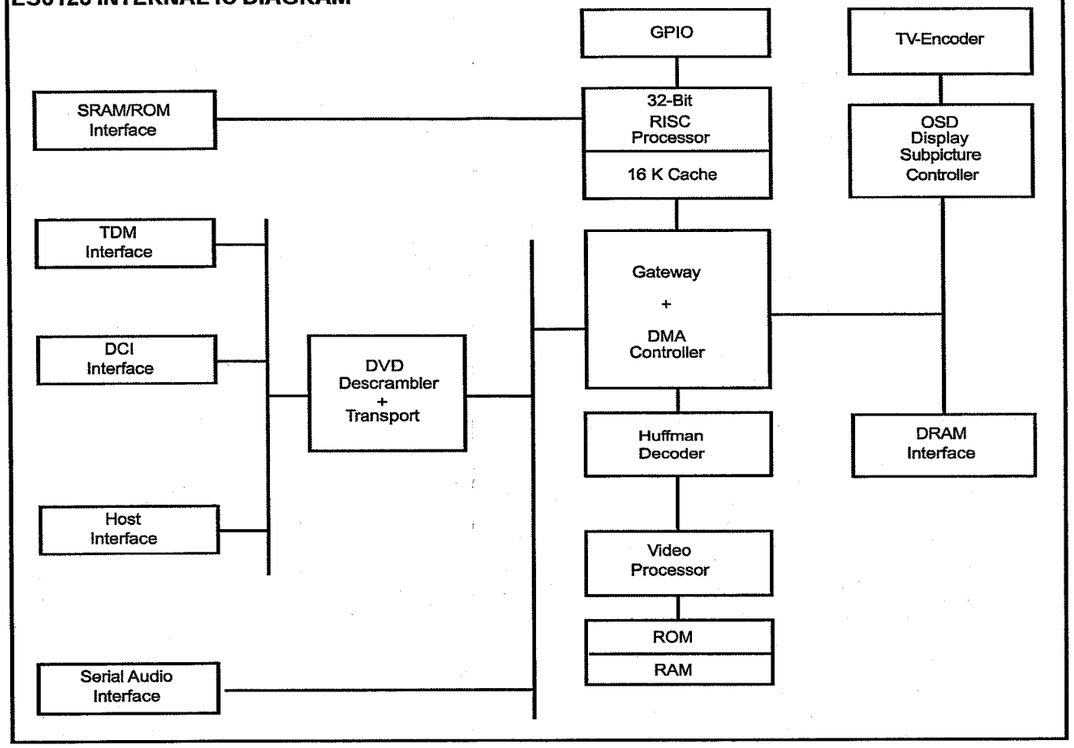
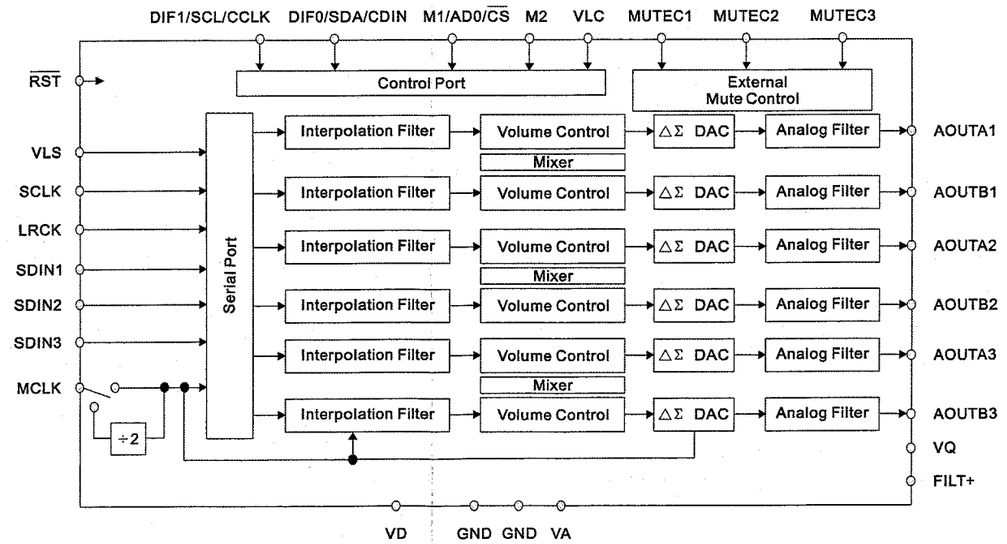
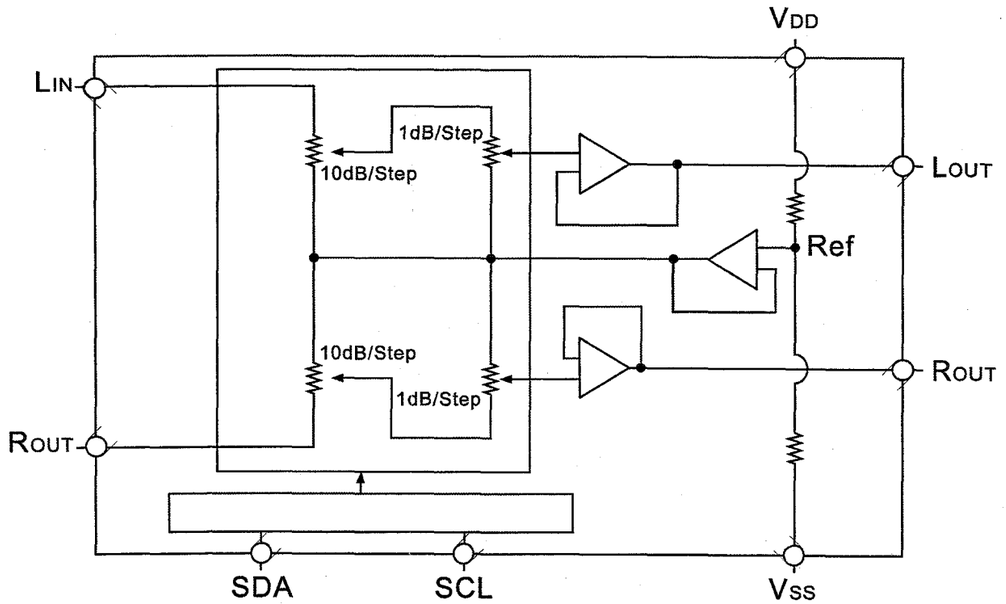
ES6128 INTERNAL IC DIAGRAM



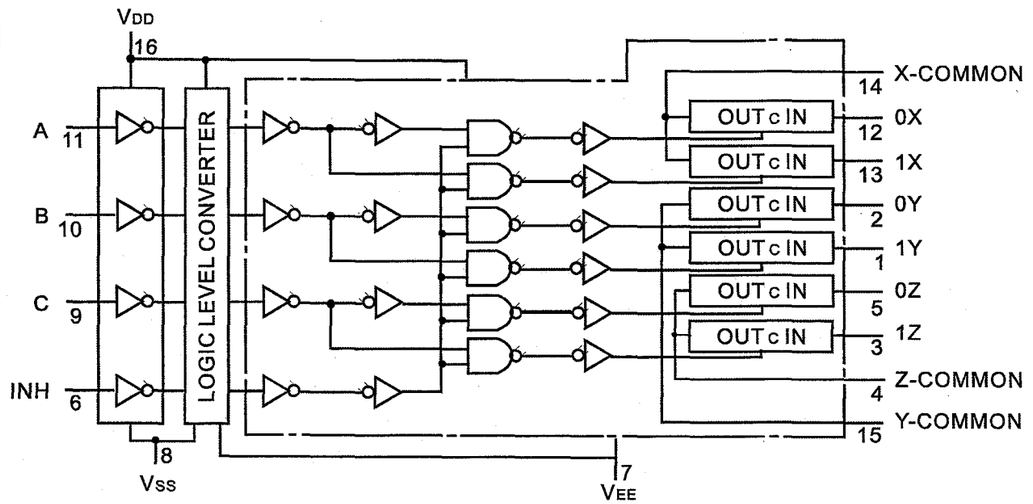
CS4360 INTERNAL IC DIAGRAM



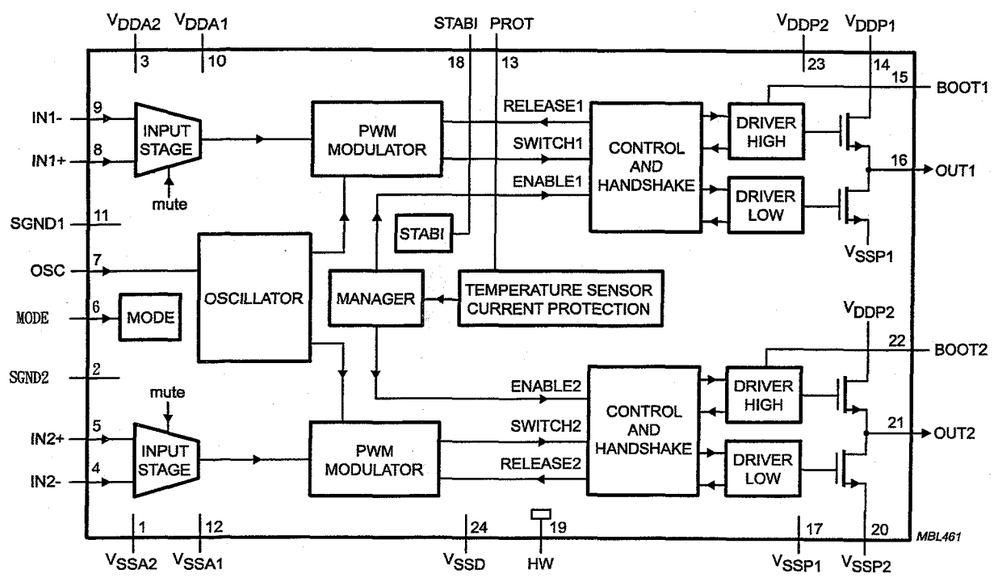
PT2259 INTERNAL IC DIAGRAM



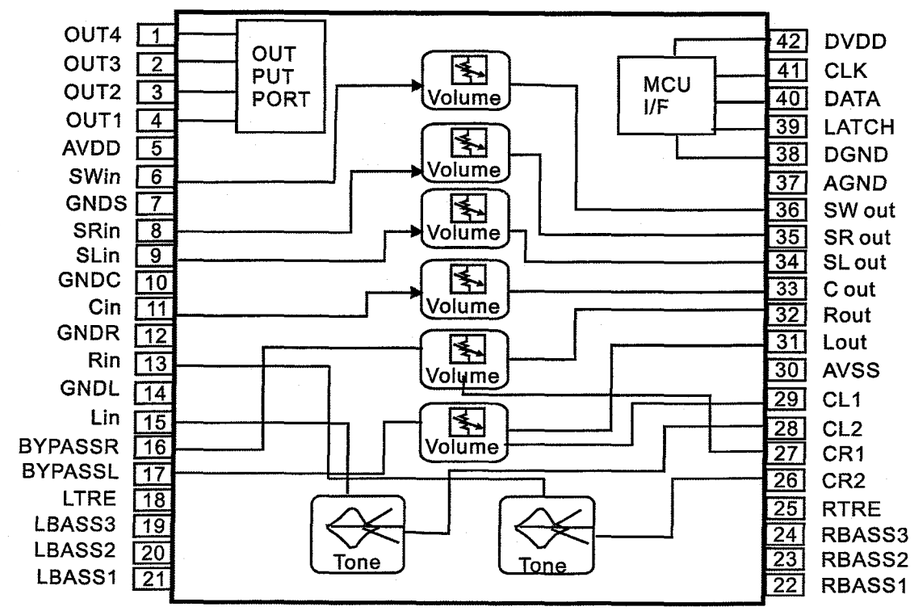
CS4053BFN INTERNAL IC DIAGRAM



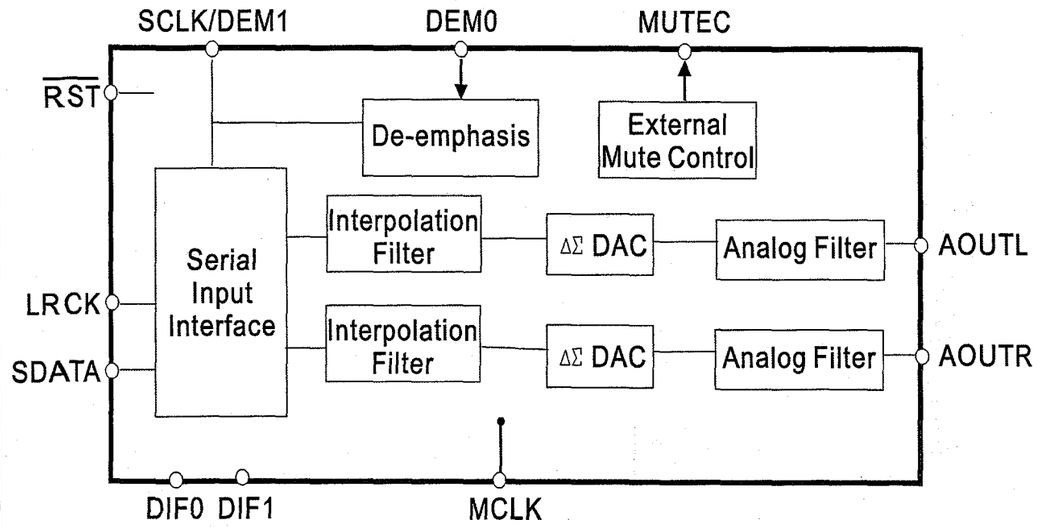
TDA8924TH INTERNAL IC DIAGRAM



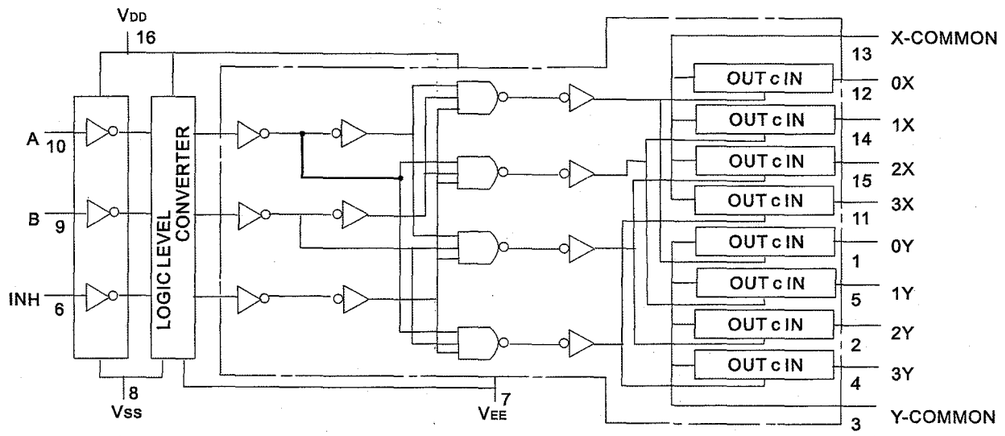
M62446FP INTERNAL IC DIAGRAM



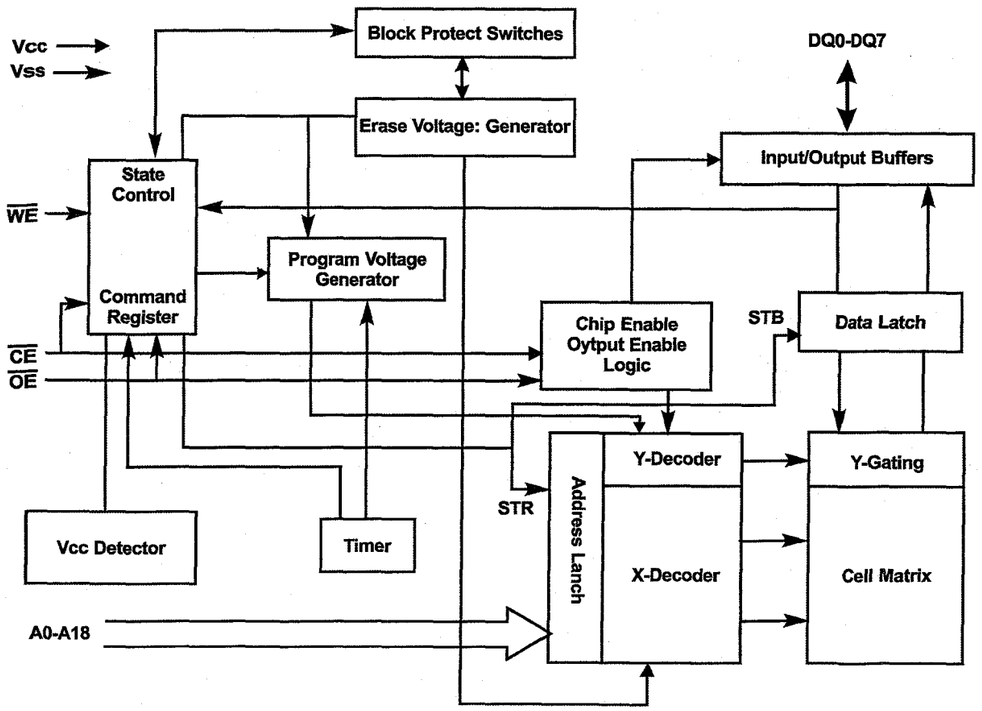
CS4340 INTERNAL IC DIAGRAM



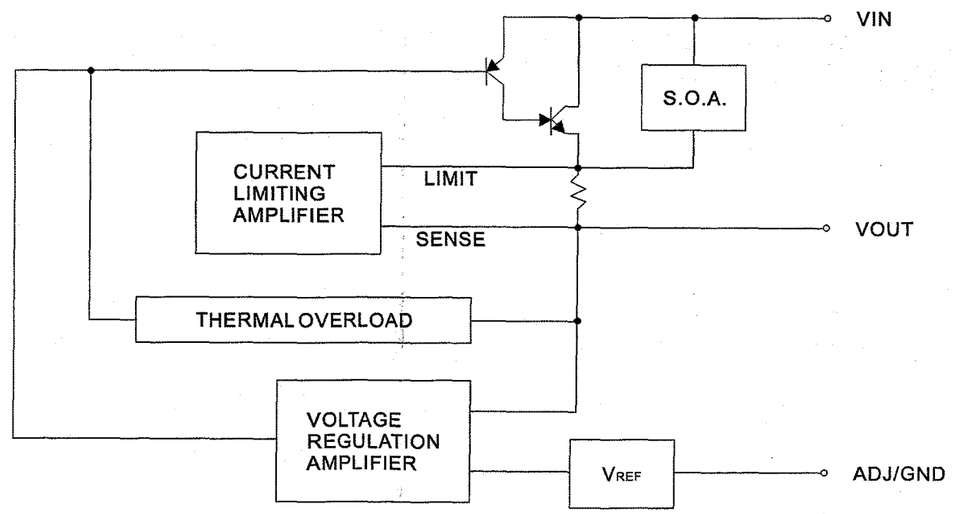
TC4052BF INTERNAL IC DIAGRAM



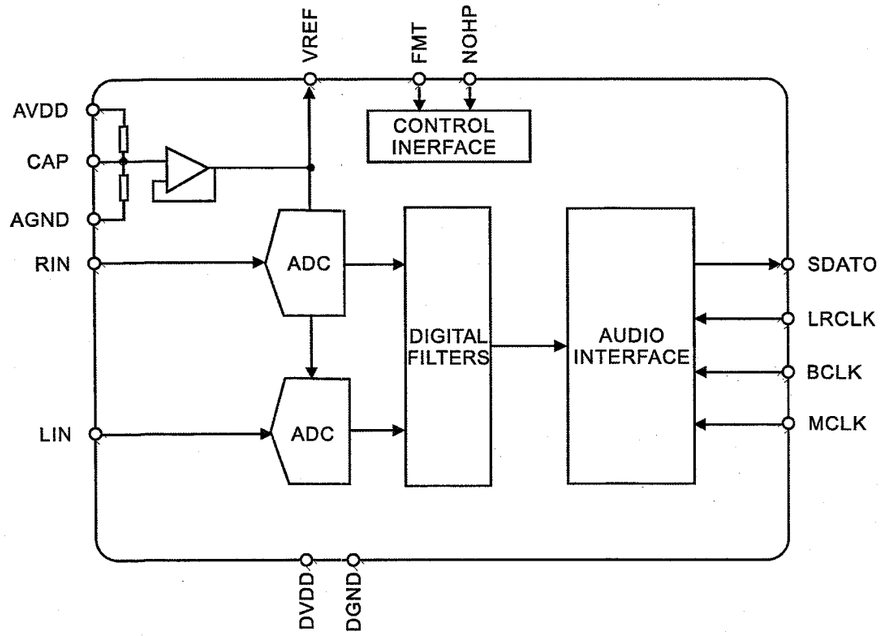
EN29F040A



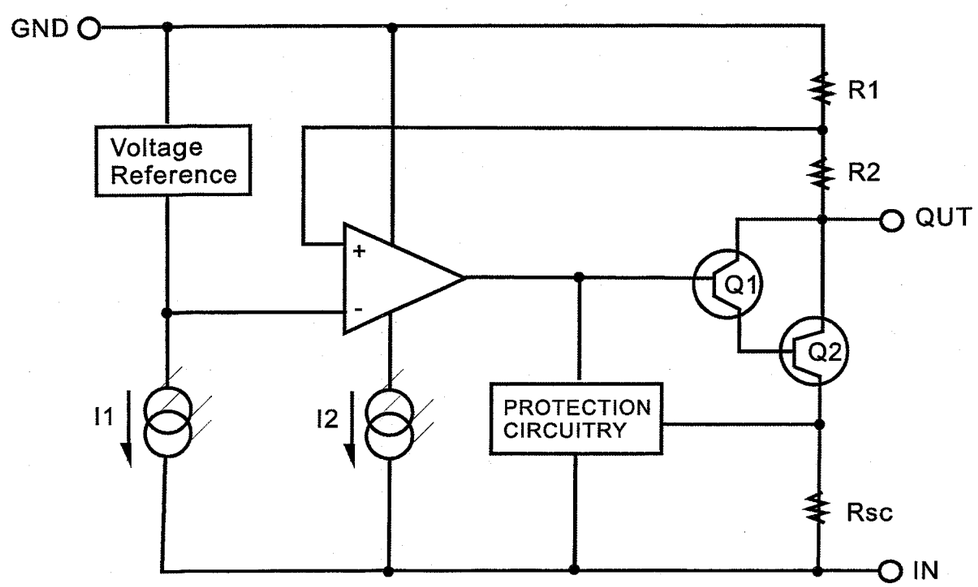
RT9164 INTERNAL IC DIAGRAM



WM8738ED INTERNAL IC DIAGRAM



7912 INTERNAL IC DIAGRAM



5-4

OPTICAL FUNCTION

IC1001 (74HCU04D)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	3.3	0.2	0.2	5	0	5	0	0	3.3	1.8	2.3	0	0	5						

IC1501 (74HCU04D)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	2.3	2.3	2.3	2.3	2.3	2.3	0	2.3	1.3	1.1	3.8	3.8	1.1	5						

IC5001 (74HCU04D)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	4	0	2.3	2.3	2.3	2.3	0	0	4.6	2.3	2.3	4.6	0	4.6						

IC1002 (RT9164-33CLR)

PIN NO	1	2	3																	
Voltage	5	0	3.3																	

IC1004 (EN29F0401-70PI)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	3.3	3.3	0	0	0	0	0	3.3	0	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0.3
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32								
Voltage	0.3	3.3	3.3	3.3	3.3	3.3	0	3.3	0	2.3	3.3	5								

IC1005 (ES6128F)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.3	1.4	1.4	1.4	1.7	3.3	0	2	1.6	1.3	3.3	0.4	0.4	2.3	1.4	0	3.3	3.3	1	0.2
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0.2	0.2	0.2	5	0	0	3.3	1.6	1.6	1.6	0.6	1.6	0	0	2	0	0	0	1.5	1.6
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Voltage	0	1	0	2	0.6	0.6	0.6	0.6	2.2	1.5	3.3	0	0	0	2.8	0	0	0	3.3	0
PIN NO	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Voltage	1.2	1	0	0	0	0	0	3.3	3.3	3.3	0	3.3	0	0	3.3	0	0	0	0	0
PIN NO	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Voltage	0	0	2	0	0	0	0	0	0	0	1	3.3	0	0	0	0	3.3	0	3.3	3.3
PIN NO	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Voltage	0	1.6	0	3.3	2.2	0	0	0	0	0	0	0	0	0	2	0.5	4	4	4	0
PIN NO	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Voltage	2	0.4	0.4	3.3	3.3	3.3	3.3	0	0	3.3	4	3.3	3.3	3.3	3.3	3.3	0	0	2	3.3
PIN NO	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Voltage	3.3	4	0	4.5	4.5	4.5	0	3.3	3.3	3.3	0	0	0	0	0	0	3.3	0	3.3	4.5
PIN NO	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Voltage	4.5	4.5	0	3.3	1.8	4	4	4	3.3	3.3	0	2	3.3	3.3	3.3	3.3	0	0.4	0.4	0.4
PIN NO	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
Voltage	0.4	0.4	3.3	0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0	3.3	0.4	0.4	0.4	0.4	3.3	3.3	0
PIN NO	201	202	203	204	205	206	207	208												
Voltage	3.3	0.4	0.4	0	0	1.3	1.6	0												

IC1006 (RT9164-CG)

PIN NO	1	2	3																	
Voltage	0.8	2.1	5																	

IC1007 (CS4360)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	5	0	0	0	1.6	0	1.4	5	0	5	3.3	0	3.3	5	0	5	2.3	0	2.3	2.3
PIN NO	21	22	23	24	25	26	27	28												
Voltage	0	5	2.3	2.3	0	2.3	2.3	0												

IC1009(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC1010(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC1011 J(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC1012(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC1018 (CS4340)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	5	0	1.6	1.6	1.4	0	0	0	5	2	0	2	0	5	0	5

IC1030 (AT24C02N)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	0	5	5	0	5

IC1031 (IS42S16400A-6T)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.3	0	3.3	0	0	0	0	0	3.3	1	0	0	0	3.3	0	3.3	3.3	3.3	3.3	0
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0	0	0	0	2.3	2.3	3.3	0	2.4	1.4	0.7	0.7	0	0	0	0	3.3	1.6	0	0
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
Voltage	0	0	3.3	0	0	0	0	0	3.3	0	0	0	0	0						

IC1502 (TC74LVX125FT)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Voltage	0	1.2	1	3.3	0.2	1	0	1	0	3.3	1	1	0.2	5

IC1503 (WM8738ED)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Voltage	3.3	1.6	1.6	0	2.4	2.4	2.4	2.4	5	0	0	1.6	1.6	0

IC3001 (TC4052BFN)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	0	0	0	0	0	-5	0	3.3	3.3	0	0	0	0	0	5

IC3002(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC3003(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC3004(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC3005(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC3006(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC3007(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4004(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

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IC4005(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4006(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4007(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4008(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4009(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4010(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4011(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4012(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4014 (M62446FP)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	0	5	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0	0	0	0	0	0		0	0	-7	0	0	0	0	0	0	0	0	0	3.3
PIN NO	41	42																		
Voltage	3.3	5																		

IC4016 (PT2259)

PIN NO	1	2	3	4	5	6	7	8
Voltage	3.3	0	0	5	5	7	3.3	3.3

IC5002 (HEF4013BT)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Voltage	2.3	2.3	2.3	0	2.3	0	0	0	0	0	0	0	4.5	4.5

IC5004(TDA8924TH)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	-26	0	26	0	0	2	2	0	0	26	0	-26	-26	26	0	0	-26	-26	-26	-26
PIN NO	21	22	23	24																
Voltage	0	0	26	-26																

IC5005 (TDA8924TH)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	-26	0	26	0	0	2	2	0	0	26	0	-26	-18	-26	0	0	-26	-14	-26	-26
PIN NO	21	22	23	24																
Voltage	0	0	26	-26																

IC5006 (TDA8924TH)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	-26	0	26	0	0	2	2	0	0	26	0	-26	-14	26	11	0	-26	-14	-26	-26
PIN NO	21	22	23	24																
Voltage	0	11	26	-26																

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IC5007 (TDA8924TH)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	-26	0	26	0	0	2	2	0	0	26	0	-26	-14	26	11	0	-26	-14	-26	-26
PIN NO	21	22	23	24																
Voltage	0	11	26	-26																

IC4001 (TC4053BFN TOSHIBA)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Voltage	0	0	0	0	0	0	-5.3	0	0	0	0	0	0	0	0	5.3				

IC4002 (TC4053BFN TOSHIBA)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Voltage	0	0	0	0	0	0	-5.3	0	0	0	0	0	0	0	0	5.3				

IC4003 (TC4053BFN TOSHIBA)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Voltage	0	0	0	0	0	0	-5.3	0	0	0	0	0	0	0	0	5.3				

IC902 (7912)

PIN NO	1	2	3																	
Voltage	0	-17	-12																	

TUNER FUNCTION

IC1001 (74HCU04D)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	2.3	2.3	2.3	2.3	2.3	2.3	0	2.3	2.3	1.3	3.6	3.6	1.3	5						

IC1002 (RT9164-33CLR)

PIN NO	1	2	3																	
Voltage	5	0	3.3																	

IC1004 (EN29F0401-70PI)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0.1	2	3	0.2	1.2	1.3	0.5	0.4	1.4	1.4	0	0	1.6	0.2	0.5	0	1.8	1.8	0.2	0.2
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32								
Voltage	0.2	3.2	2	3.2	1.7	1.4	2	1.7	0.8	1.8	3.3	5								

IC1005 (ES6128F)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.3	1.4	1.4	1.4	1	2	1.4	0	2	2	2	0	1.6	0.8	2.7	1.7	0	3.3	3.3	0
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0	0	0	5	3.3	0	3.3	0	0	0	0.3	0	0	0	2	0	0	0	0.3	0
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Voltage	0	0.3	0	2	0.3	0.3	0	2.2	1.5	1.5	3.3	0	0	1	2.7	1.5	1.4	3.3	0	1.5
PIN NO	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Voltage	1.8	1.8	1	0	0	0	0	3.3	3.3	3.3	3.3	3.3	0	0	3.3	0	1.4	1.4	1.4	1.4
PIN NO	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Voltage	1.4	1.4	2	0	1.4	1.4	1.4	1.4	1.4	1.4	0	3.3	1.4	1.4	1.4	1.4	3.3	0	3.3	3.3
PIN NO	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Voltage	0	1.6	0	3.3	3.3	0	0	0	0	0	3.3	0	0	0	2	1	4	4	4	0
PIN NO	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
Voltage	2	0.2	0.2	3.3	0	3	3	3.3	0	3.3	0	0	3.3	3.3	3.3	3.3	0	0	2	3.3
PIN NO	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
Voltage	0	4	0	4.5	4.5	4.5	0	3.3	0	3.3	0	0	3.3	0	4.3	0	3.3	0	3.3	4.5
PIN NO	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
Voltage	4.5	4	0	3.3	4	4	4	0.2	0.2	3.3	0	2	3.3	3.3	3.3	3.3	0	3.3	0	0
PIN NO	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
Voltage	3.3	3.3	3.3	0	1.1	1.1	0.3	0.3	0.3	0.3	0.3	0	3.3	0.3	0.3	0.3	0.3	3.3	3.3	0
PIN NO	201	202	203	204	205	206	207	208												
Voltage	3.3	0.2	0.2	0	0	1.5	1.5	0												

IC1006 (RT9164-CG)

PIN NO	1	2	3																	
Voltage	0.8	2.1	5																	

IC1007 (CS4360)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	5	1.6	1.6	1.6	1.6	1.6	1.6	5	0	5	3.3	0	3.3	5	0	5	2.3	0	2.3	2.3
PIN NO	21	22	23	24	25	26	27	28												
Voltage	0	5	2.3	2.3	0	2.3	2.3	0												

IC1009(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC1010(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC1011 J(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC1012(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC1018 (CS4340)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Voltage	5	1	1.6	1.6	1.4	0	0	0	5	2	0	2	0	5	2	0				

IC1030 (AT24C02N)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	0	5	5	0	5												

IC1031 (IS42S16400A-6T)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.3	1.3	3.3	1.4	1.4	0	1.3	1.3	3.3	1.3	1.3	0	1	3.3	0	3.3	3.3	3.3	3.3	0
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0	0	0	1	1.3	1.3	3.3	0	1.5	1.3	1.6	1.7	0	0	0	0	3.3	1.6	0	0
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
Voltage	1.4	3.3	1.3	1.3	0	1.3	1.3	1.3	3.3	1.3	1.3	0	1.3	0						

IC1501 (74HCU04D)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	2.3	2.3	2.3	2.3	2.3	2.3	0	2	2.3	1.1	3.8	3.8	1.3	5						

IC1502 (TC74LVX125FT)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	3.3	1.3	2	3.3	0	2	0	2	2.2	0	1.6	2	5	5						

IC1503 (WM8738ED)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	3.3	1.6	1.6	0	2.4	2.4	2.4	2.4	5	0	0	1.6	1.4	0						

IC3001 (TC4052BFN)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Voltage	0	0	0	0	0	0	-5	0	3.3	0	0	0	0	0	0	5				

IC3002(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC3003(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

IC3004(RC4558M)

PIN NO	1	2	3	4	5	6	7	8												
Voltage	0	0	0	-12	0	0	0	12												

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IC3005(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC3006(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC3007(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4001 (TC4053BFN TOSHIBA)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	0	0	0	0	0	-5.3	0	0	0	0	0	0	0	0	5.3

IC4002 (TC4053BFN TOSHIBA)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	0	0	0	0	0	-5.3	0	0	0	0	0	0	0	0	5.3

IC4003 (TC4053BFN TOSHIBA)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	0	0	0	0	0	0	-5.3	0	0	0	0	0	0	0	0	5.3

IC4004(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4005(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4006(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4007(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4008(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4009(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4010(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4011(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4012(RC4558M)

PIN NO	1	2	3	4	5	6	7	8
Voltage	0	0	0	-12	0	0	0	12

IC4014 (M62446FP)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	0	0	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0	0	0	0	0	0	0	0	0	-70	0	0	0	0	0	0	0	0	0	3.3
PIN NO	41	42																		
Voltage	3.3	5																		

IC4016 (PT2259)

PIN NO	1	2	3	4	5	6	7	8
Voltage	3.3	3.3	0	5	4.5	7	3.3	3.3

IC5001 (74HCU04D)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Voltage	0.4	4.6	2.3	2.3	2.3	2.3	0	0	4.6	2.3	2.3	4.6	0	4.6

IC5002 (HEF4013BT)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Voltage	2.3	2.3	2.3	0	2.3	0	0	0	0	0	0	0	4.5	4.5

IC5004(TDA8924TH)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	-26	0	26	0	0	2.5	2.5	0	0	26	0	-26	-26	26	11	0	-26	-26	-14	-26
PIN NO	21	22	23	24																
Voltage	0	11	27	-14																

IC5005 (TDA8924TH)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	-26	0	26	0	0	4	2	0	0	26	0	-24	-24	26	0	0	-26	-26	-26	-26
PIN NO	21	22	23	24																
Voltage	0	0	26	-26																

IC5006 (TDA8924TH)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	-26	0	26	0	0	4	2	0	0	26	0	-26	-14	26	11	0	-26	-14	-26	-26
PIN NO	21	22	23	24																
Voltage	0	11	27	-26																

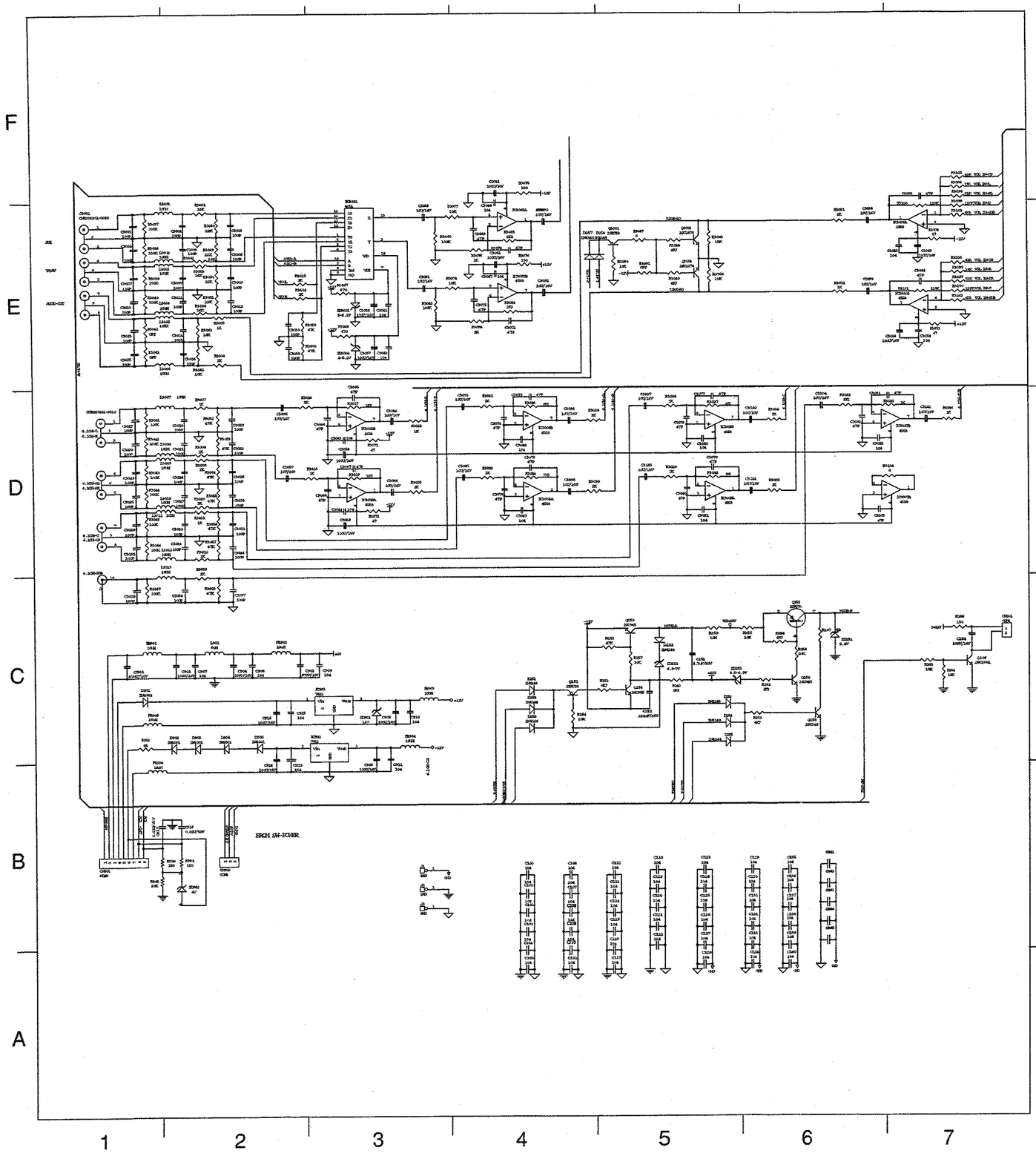
IC5007 (TDA8924TH)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	-26	0	26	0	0	4	2	0	0	26	0	-26	-14	26	11	0	-26	-14	-26	-26
PIN NO	21	22	23	24																
Voltage	0	11	27	-26																

IC902 (7912)

PIN NO	1	2	3
Voltage	0	-17	-12

CIRCUIT DIAGRAM - BOTTOM LEFT



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C101	B 4	C3013	E 1	C3084	E 7	IC3004	D 4	R3011	D 2	R3074	E 7
C102	B 4	C3014	E 2	C3085	D 2	IC3005	D 5	R3012	D 2	R3075	F 4
C103	B 4	C3015	E 1	C3086	D 3	IC3006	E 7	R3013	D 2	R3076	E 4
C104	B 4	C3016	E 2	C3087	D 2	IC3007	D 7	R3014	E 2	R3077	E 3
C105	A 4	C3018	D 2	C3088	D 3	IC902	C 3	R3015	E 2	R3078	E 3
C106	B 4	C3019	D 2	C3089	E 3	J1	B 3	R3016	D 2	R3080	E 3
C107	B 4	C3021	D 2	C3090	E 4	J2	B 3	R3017	D 3	R3082	E 3
C108	B 4	C3022	D 2	C3091	E 3	J3	B 3	R3018	D 3	R3083	E 4
C109	B 4	C3024	D 2	C3092	E 4	J3001	E 1	R3019	D 3	R3084	E 4
C110	B 4	C3025	D 2	C3093	D 4	L3001	E 1	R3020	D 4	R3085	E 4
C111	A 4	C3027	D 2	C3094	D 4	L3002	E 1	R3021	D 4	R3086	E 4
C112	B 5	C3028	D 2	C3095	D 4	L3003	E 1	R3022	D 3	R3087	E 5
C113	B 5	C3030	D 2	C3096	D 4	L3004	E 1	R3023	D 4	R3088	E 5
C114	B 5	C3031	D 2	C3097	D 5	L3005	E 1	R3024	D 4	R3089	E 5
C115	B 5	C3033	D 2	C3098	E 6	L3006	E 1	R3025	D 3	R3090	E 5
C116	B 5	C3034	D 2	C3099	E 6	L3007	D 1	R3026	D 5	R3091	E 5
C117	A 5	C3036	C 2	C3100	D 6	L3008	D 1	R3027	D 5	R3092	D 5
C118	B 5	C3037	C 2	C3101	D 6	L3009	D 1	R3028	D 4	R3093	D 6
C119	B 5	C3038	E 2	C3102	D 7	L3010	D 1	R3029	D 5	R3094	F 7
C120	B 5	C3039	E 2	C3103	D 5	L3011	D 1	R3030	D 4	R3096	F 7
C121	B 5	C3041	E 3	C3104	D 6	L3012	D 1	R3031	E 6	R3097	E 7
C122	B 5	C3042	E 3	C3105	D 6	L3013	D 1	R3032	E 6	R3098	E 7
C123	B 5	C3043	D 3	C902	C 2	L901	C 2	R3033	D 6	R3099	E 7
C124	B 5	C3044	D 3	C903	C 2	L903	C 3	R3034	D 6	R3100	E 7
C125	B 5	C3046	E 4	C904	C 2	Q251	C 4	R3035	D 6	R3101	E 7
C126	B 5	C3047	E 4	C905	C 3	Q252	C 6	R3036	D 7	R3102	E 7
C127	B 5	C3048	D 4	C906	B 3	Q253	C 5	R3037	E 1	R3103	E 7
C128	A 5	C3049	D 4	C907	C 2	Q254	C 5	R3038	E 1	R3104	D 6
C129	B 6	C3050	D 5	C908	C 2	Q255	C 6	R3039	E 1	R3105	F 7
C130	B 6	C3051	D 5	C909	C 3	Q256	C 6	R3040	E 1	R3106	E 7
C131	B 6	C3052	D 6	C910	C 3	Q3001	E 5	R3041	D 1	R900	B 2
C132	B 6	C3053	E 7	C911	B 3	Q3002	E 5	R3042	D 1	R901	B 2
C133	B 6	C3054	E 7	C913	B 2	Q3003	E 5	R3043	D 1	R904	C 2
C134	A 6	C3056	E 3	C914	B 2	Q901	C 3	R3044	D 1	R905	C 7
C135	B 6	C3057	E 3	C915	C 2	Q902	C 7	R3045	D 1	R906	C 7
C136	B 6	C3058	D 3	C916	C 2	R251	C 5	R3046	D 1	ZD251	C 6
C137	B 6	C3059	D 3	C918	B 2	R252	C 5	R3048	E 2	ZD252	C 5
C138	B 6	C3061	F 4	C921	C 3	R253	C 6	R3049	E 2	ZD253	C 5
C139	B 6	C3062	E 4	C922	C 7	R254	C 4	R3050	E 2	ZD3001	E 3
C140	A 6	C3063	E 7	CN101	F 6	R255	C 6	R3051	E 2	ZD3002	E 3
C141	B 6	C3064	E 7	CN902	B 2	R256	C 6	R3052	D 2	ZD901	C 3
C142	B 6	C3065	E 3	D251	C 4	R257	C 5	R3053	D 2	ZD902	B 2
C143	B 6	C3066	D 3	D252	C 5	R258	C 6	R3054	D 2		
C144	B 6	C3067	D 3	D253	C 5	R259	C 5	R3055	D 2		
C145	B 6	C3068	D 3	D254	C 5	R260	C 5	R3056	D 2		
C251	C 5	C3069	E 4	D255	C 5	R261	C 6	R3057	D 2		
C252	C 5	C3070	E 4	D256	E 4	R263	C 7	R3058	C 2		
C254	C 7	C3071	E 4	D257	E 4	R264	C 7	R3059	E 2		
C3001	E 1	C3072	E 4	D258	C 4	R266	C 7	R3060	E 2		
C3002	E 2	C3073	D 4	D259	C 4	R267	C 6	R3061	E 1		
C3003	E 2	C3074	D 4	D902	C 2	R3001	E 2	R3062	E 1		
C3004	E 1	C3075	D 4	D903	C 2	R3002	E 2	R3063	E 2		
C3005	E 2	C3076	D 4	D904	C 2	R3003	E 2	R3064	E 2		
C3006	E 2	C3077	D 5	D905	C 2	R3004	E 2	R3065	E 5		
C3007	E 1	C3078	D 5	FB902	C 2	R3005	E 2	R3066	E 5		
C3008	E 2	C3079	D 5	FB903	C 3	R3006	E 2	R3067	E 3		
C3009	E 2	C3080	D 5	FB904	C 3	R3007	D 2	R3068	E 3		
C3010	E 1	C3081	D 6	IC3001	E 3	R3008	D 2	R3071	D 3		
C3011	E 2	C3082	D 6	IC3002	D 3	R3009	D 2	R3072	D 3		

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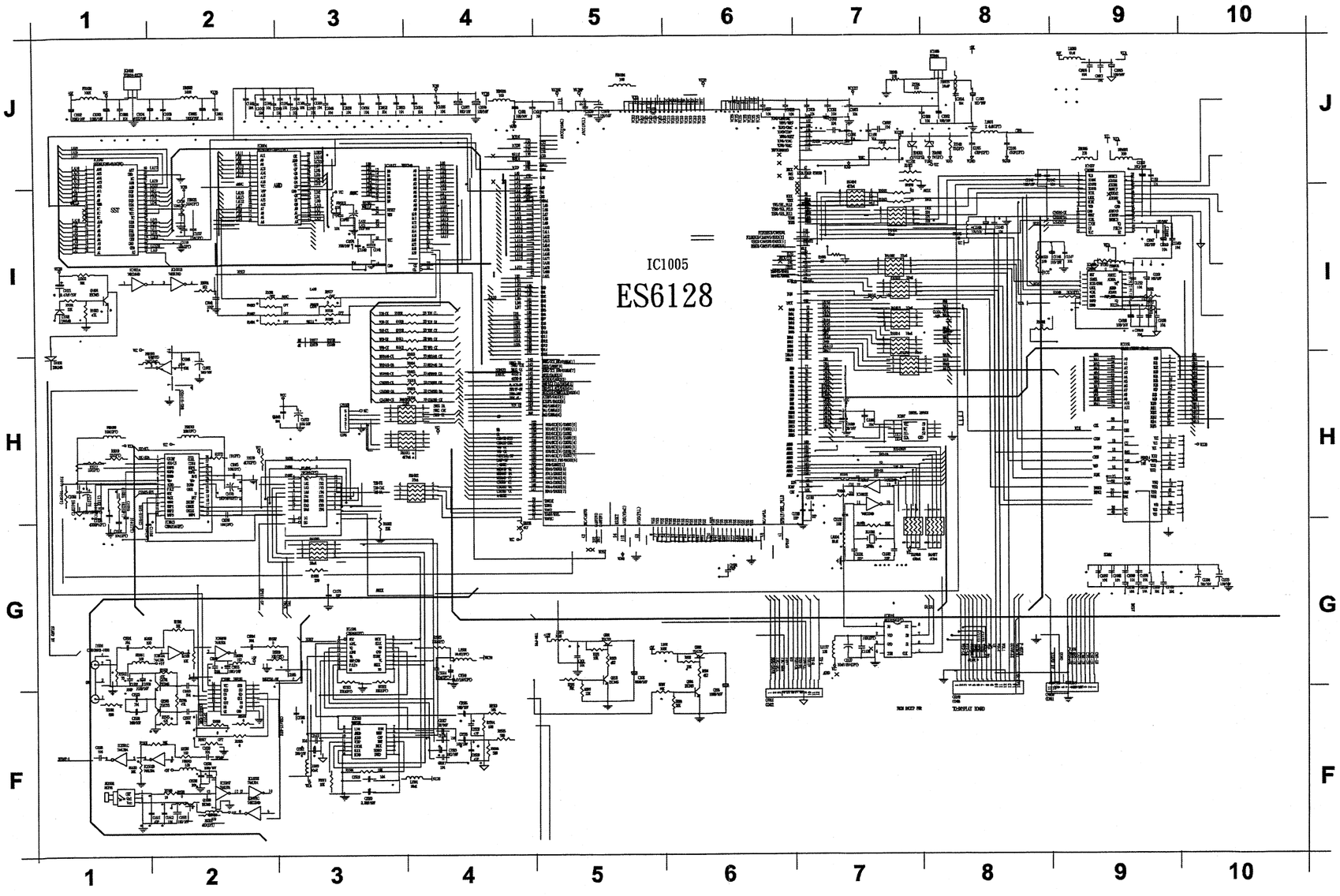
CIRCUIT DIAGRAM - TOP LEFT



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C1002	J 1	C1014	J 8	C1028	G 1	C1048	J 3	C1060	J 7	C1073	H 3	C1086	I 9	C1106	J 8	C1118	H 10	C1130	H 6	C1145	I 8	C1158	G 9
C1003	J 1	C1016	J 8	C1029	H 1	C1049	I 3	C1061	J 7	C1074	I 3	C1087	I 9	C1107	J 10	C1119	H 10	C1131	G 7	C1146	I 8	C1159	G 9
C1004	J 1	C1017	J 9	C1030	G 2	C1050	J 3	C1062	J 7	C1075	H 1	C1088	I 9	C1108	I 10	C1120	H 10	C1132	G 7	C1147	I 8	C1160	G 9
C1005	J 2	C1018	I 9	C1031	G 6	C1051	J 3	C1063	J 7	C1076	H 2	C1090	J 10	C1109	I 10	C1121	J 10	C1133	G 7	C1148	I 9	C1161	G 9
C1006	J 10	C1019	I 9	C1040	H 10	C1052	J 3	C1064	H 1	C1077	J 4	C1091	I 10	C1110	I 10	C1122	J 10	C1134	G 9	C1149	I 9	C1162	H 1
C1007	I 10	C1020	I 9	C1041	I 2	C1053	J 3	C1065	H 2	C1078	J 4	C1092	I 10	C1111	I 10	C1123	I 10	C1137	G 7	C1150	J 9	C1163	J 2
C1008	J 1	C1022	J 10	C1042	J 2	C1054	J 3	C1066	H 7	C1079	J 5	C1093	I 10	C1112	J 10	C1124	I 10	C1138	G 7	C1151	I 9	C1164	J 2
C1009	J 2	C1023	I 10	C1043	J 2	C1055	J 4	C1067	G 9	C1080	H 7	C1094	I 10	C1113	I 10	C1125	I 10	C1140	I 3	C1152	I 9	C1165	J 3
C1010	I 2	C1024	I 10	C1044	H 2	C1056	J 5	C1068	G 9	C1081	J 4	C1095	H 10	C1114	I 10	C1126	H 10	C1141	I 3	C1153	I 9	C1166	J 3
C1011	J 2	C1025	I 10	C1045	J 3	C1057	J 6	C1069	G 9	C1082	J 7	C1102	H 10	C1115	I 10	C1127	H 10	C1142	I 8	C1155	G 1	C1167	J 3
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C1171	G 8	C1508	F 3	C1522	F 3	C201	G 5	D1002	H 1	R1027	I 7	R1524	F 3										
C1172	G 8	C1509	F 1	C1523	F 4	C202	G 5	FB1001	J 1	R1028	J 6	R1525	F 2										
C1173	G 8	C1510	F 1	C1525	F 4	C203	F 6	FB1002	J 2	R1031	J 7	R1526	F 2										
C1174	G 8	C1511	F 1	C1526	F 4	C3040	G 2	FB1003	J 4	R1032	J 10	R1527	F 2										
C1175	G 3	C1512	F 2	C1527	F 4	C3055	G 2	FB1004	J 5	R1033	J 10	R201	G 5										
C1501	G 1	C1513	F 3	C1528	F 4	C919	G 9	FB1005	J 9	R1034	I 10	R202	G 6										
C1502	F 1	C1514	G 4	C1529	F 4	C920	G 9	FB1006	I 9	R1035	I 10	R203	G 5										
C1503	F 1	C1516	G 4	C1530	F 3	CN1001	H 3	FB1007	J 9	R1036	I 10	R204	G 6										
C1504	G 2	C1517	F 4	C1531	F 1	CN101	F 6	FB1008	H 1	R1037	H 10	R205	F 5										
C1505	G 3	C1518	F 4	C1532	F 2	CN102	F 7	FB1009	J 5	R1038	G 4	R206	F 5										
C1506	F 2	C1519	F 3	C1533	F 2	CN103	F 8	FB1010	F 2	R1040	H 10	R207	F 5										
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								FB1013	I 3	R1043	I 7	R4109	F 10										
								FB1014	H 9	R1044	H 7	R907	G 8										
								FB1015	I 8	R1045	H 7	RA1001	I 7										
								FB1016	J 8	R1046	J 7	RA1002	I 7										
								FB1019	F 2	R1048	J 8	RA1003	I 7										
								FB1020	I 8	R1049	I 8	RA1004	I 7										
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								IC1004	J 2	R1055	H 10	RA1014	H 7										
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								IC1006	J 7	R1057	I 10	RA1016	G 7										
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								IC1009	J 10	R1059	I 10	XL1001	G 7										
								IC1010	I 10	R1060	I 10	ZD1001	J 7										
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								IC1013	G 2	R1063	H 10												
								IC1016	G 7	R1064	J 10												
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								Q202	G 6	R1092	I 9												
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								Q204	F 6	R1094	J 7												
								R1001	I 1	R1501	G 2												
								R1002	I 1	R1502	G 1												
								R1003	I 1	R1503	G 2												
								R1004	I 2	R1504	F 2												
								R1005	H 1	R1505	F 2												
								R1008	I 3	R1506	F 2												
								R1009	I 3	R1507	G 2												
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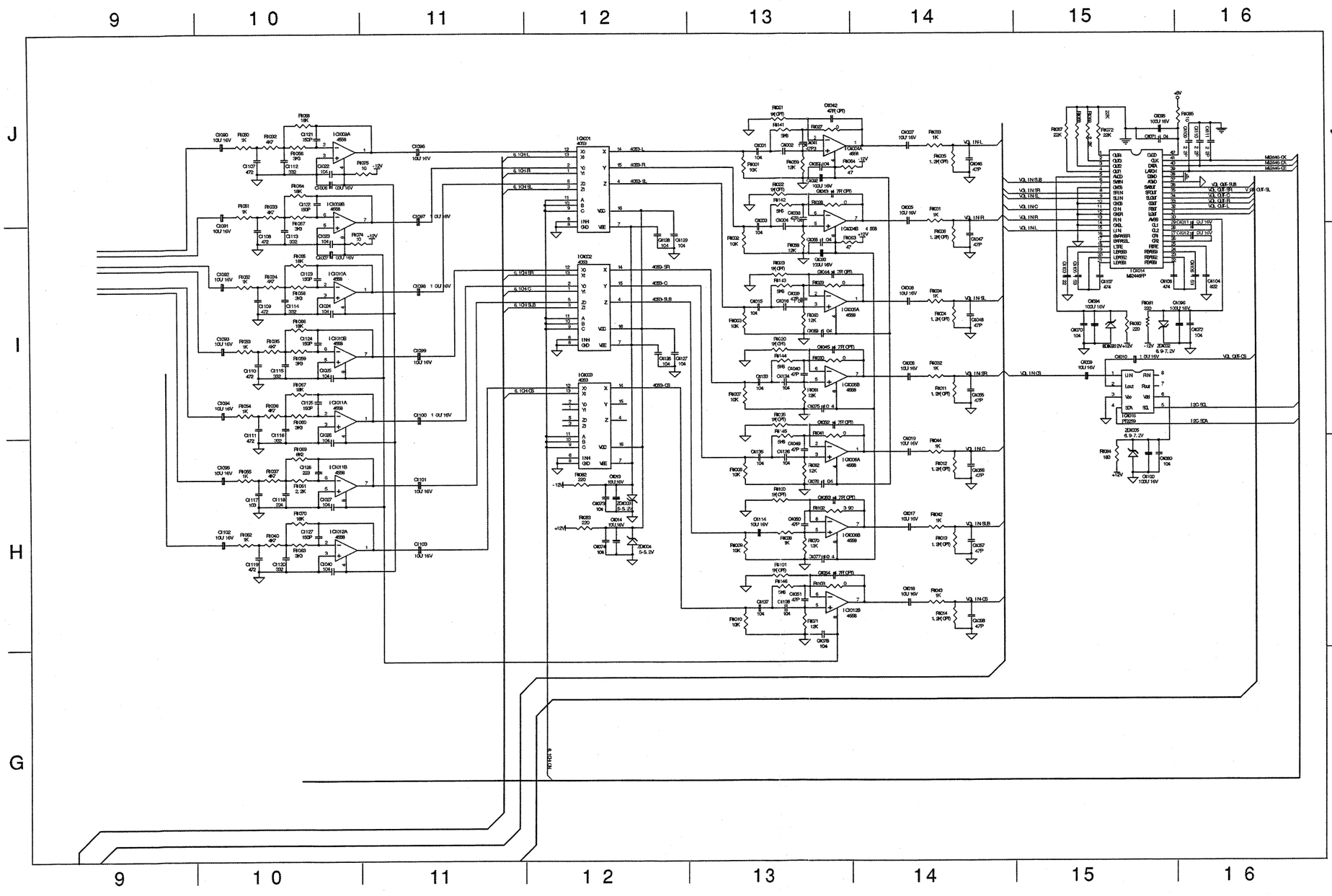
CIRCUIT DIAGRAM - TOP RIGHT



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C1025	I 10	C4 074	H 12	R 4100	H 13
C1026	I 10	C4 126	I 12	R 4101	H 13
C1027	H 10	C4 127	I 12	R 4102	H 13
C1040	H 10	C4 128	I 12	R 4103	H 13
C1090	J 10	C4 129	I 12	R 4141	J 13
C1091	I 10	IC 4001	J 12	R 4142	J 13
C1092	I 10	IC 4002	I 12	R 4143	I 13
C1093	I 10	IC 4003	I 12	R 4144	I 13
C1094	I 10	R4 082	H 12	R 4145	I 13
C1095	H 10	R4 083	H 12	R 4146	H 13
C1102	H 10	Z D4003	H 12	C 4005	J 14
C1107	J 10	Z D4004	H 12	C 4006	I 14
C1108	I 10	C4 001	J 13	C 4007	J 14
C1109	I 10	C4 002	J 13	C 4008	I 14
C1110	I 10	C4 003	J 13	C 4017	H 14
C1111	I 10	C4 004	J 13	C 4018	H 14
C1112	J 10	C4 015	I 13	C 4019	H 14
C1113	I 10	C4 016	I 13	C 4046	J 14
C1114	I 10	C4 038	J 13	C 4047	I 14
C1115	I 10	C4 039	I 13	C 4048	I 14
C1116	I 10	C4 040	I 13	C 4055	I 14
C1117	H 10	C4 041	J 13	C 4056	H 14
C1118	H 10	C4 042	J 13	C 4057	H 14
C1119	H 10	C4 043	J 13	C 4058	H 14
C1120	H 10	C4 044	I 13	R 4004	I 14
C1121	J 10	C4 045	I 13	R 4005	J 14
C1122	J 10	C4 049	H 13	R 4006	I 14
C1123	I 10	C4 050	H 13	R 4011	I 14
C1124	I 10	C4 051	H 13	R 4012	H 14
C1125	I 10	C4 052	I 13	R 4013	H 14
C1126	H 10	C4 053	H 13	R 4014	H 14
C1127	H 10	C4 054	H 13	R 4031	J 14
IC1009	J 10	C4 067	J 13	R 4032	I 14
IC1010	I 10	C4 068	I 13	R 4033	J 14
IC1011	I 10	C4 069	I 13	R 4034	I 14
IC1012	H 10	C4 075	I 13	R 4042	H 14
R1032	J 10	C4 076	H 13	R 4043	H 14
R1033	J 10	C4 077	H 13	R 4044	H 14
R1034	I 10	C4 078	H 13	C 4009	I 15
R1035	I 10	C4 092	J 13	C 4010	I 15
R1036	I 10	C4 093	I 13	C 4070	I 15
R1037	H 10	C4 114	H 13	C 4071	J 15
R1040	H 10	C4 133	I 13	C 4080	H 15
R1050	J 10	C4 134	I 13	C 4094	I 15
R1051	J 10	C4 135	H 13	C 4095	J 15
R1052	I 10	C4 136	H 13	C 4096	I 15
R1053	I 10	C4 137	H 13	C 4100	H 15
R1054	I 10	C4 138	H 13	C 4103	I 15
R1055	H 10	IC 4004	J 13	C 4105	I 15
R1056	J 10	IC 4005	I 13	C 4107	I 15
R1057	I 10	IC 4006	H 13	C 4108	I 15
R1058	I 10	R4 001	J 13	I C4014	I 15
R1059	I 10	R4 002	I 13	I C4016	I 15
R1060	I 10	R4 003	I 13	R 4067	J 15
R1061	H 10	R4 007	I 13	R 4068	J 15
R1062	H 10	R4 008	H 13	R 4069	J 15
R1063	H 10	R4 009	H 13	R 4072	J 15
R1064	J 10	R4 010	H 13	R 4080	I 15
R1065	I 10	R4 020	I 13	R 4081	I 15
R1066	I 10	R4 021	J 13	R 4084	H 15
R1067	I 10	R4 022	J 13	ZD 4001	I 15
R1068	J 10	R4 023	I 13	ZD 4002	I 15
R1069	H 10	R4 027	J 13	ZD 4005	I 15
R1070	H 10	R4 028	J 13	C 4011	I 16
R1074	I 10	R4 029	I 13	C 4012	I 16
R1075	J 10	R4 030	I 13	C 4072	I 16
C1096	J 11	R4 035	I 13	C 4104	I 16
C1097	J 11	R4 038	H 13	C 4106	I 16
C1098	I 11	R4 041	I 13	C 4109	J 16

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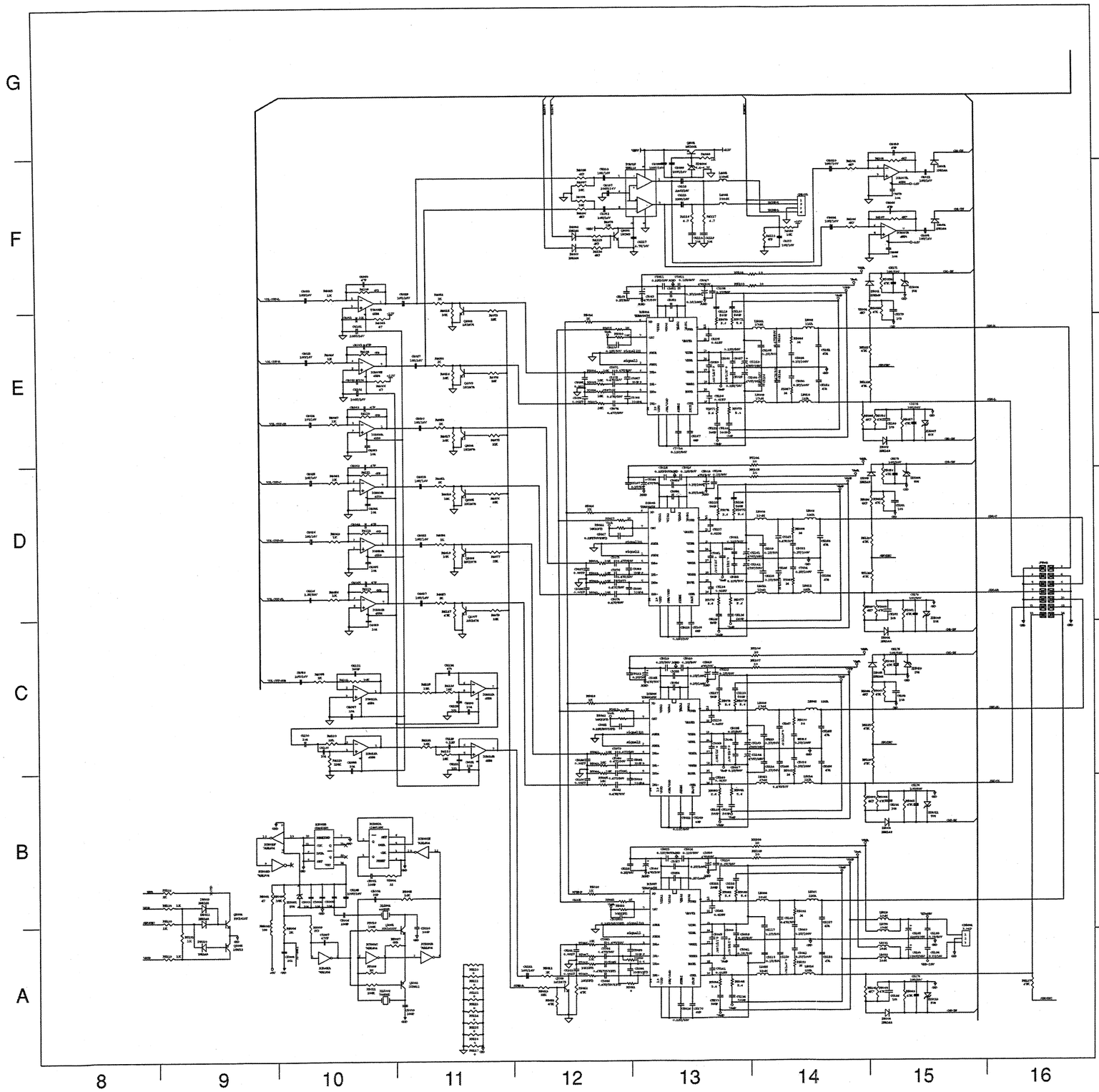
CIRCUIT DIAGRAM - BOTTOM RIGHT



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C4026	D 10	C5036	C 14	C5127	C 13	IC4010	D 10	R4120	C 10	R5089	D 14
C4027	E 11	C5037	C 13	C5128	C 13	IC4011	C 10	R4121	C 10	R5090	C 14
C4028	D 11	C5038	C 14	C5129	B 13	IC4012	C 10	R4122	C 11	R5091	B 14
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C4030	E 11	C5040	A 14	C5131	B 13	IC5001	A 10	R4124	C 11	R5093	A 14
C4031	D 11	C5041	A 13	C5132	B 13	IC5002	B 10	R4125	C 11	R5094	E 14
C4032	F 12	C5042	A 14	C5133	A 13	IC5004	E 13	R4126	C 11	R5095	E 14
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C5020	C 13	C5111	C 13	D4003	F 12	R4099	F 14	R5073	E 13		
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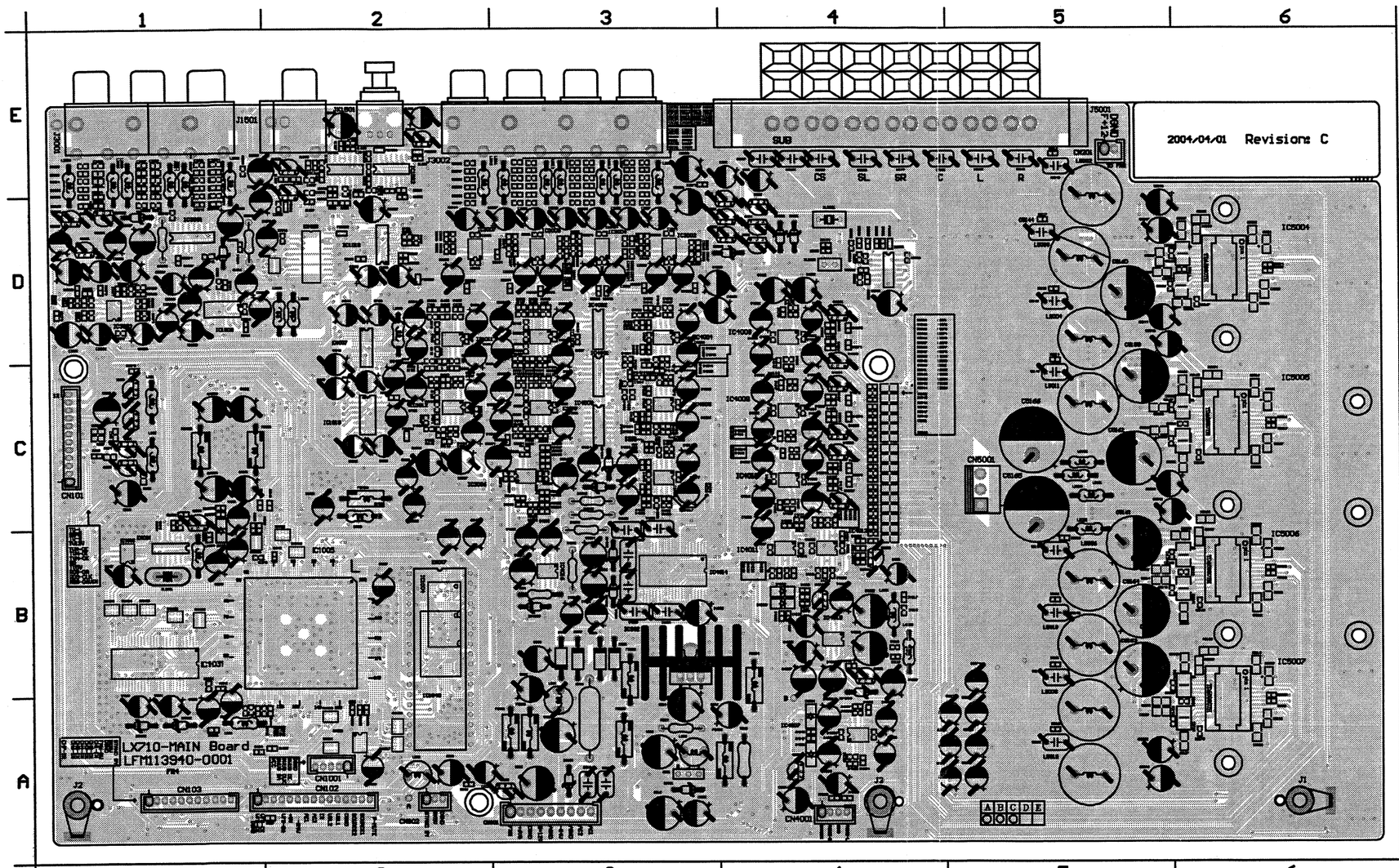
PCB LAYOUT (COMPONENT VIEW)



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IC3003	D 6	Q902	A 4	R3022	D 4	R4048	C 3	R5052	B 3	IC3004	D 4	R1001	C 6	R3023	D 4	R4049	C 3	R5053	B 3
IC3005	D 4	R1002	C 6	R3024	D 4	R4050	D 3	R5102	D 1	IC3006	C 5	R1003	B 6	R3025	D 4	R4051	C 3	R5103	D 1
IC3007	D 5	R1004	C 6	R3026	D 4	R4052	D 3	R5104	C 1	IC4001	D 4	R1005	D 5	R3027	D 4	R4053	C 3	R5105	C 1
IC4002	D 4	R1008	A 5	R3028	D 4	R4054	C 3	R5106	C 1	IC4003	C 4	R1009	A 5	R3029	D 4	R4055	C 3	R5107	B 1
IC4004	D 4	R1010	A 5	R3030	D 4	R4056	C 3	R5108	B 1	IC4005	C 4	R1017	D 5	R3033	D 5	R4057	C 3	R5109	B 1
IC4006	C 4	R1018	E 5	R3034	D 4	R4058	D 4	R5110	A 2	IC4007	A 3	R1019	D 5	R3035	D 4	R4059	D 4	R5111	B 2
IC4008	D 3	R1020	C 6	R3036	D 5	R4060	C 4	R5112	B 2	IC4009	C 3	R1021	D 5	R3037	E 6	R4061	C 4	R5113	B 2
IC4010	C 3	R1022	C 6	R3038	E 6	R4062	C 4	R5114	D 2	IC4011	B 3	R1023	A 5	R3039	E 6	R4064	D 6	R5115	D 2
IC4012	B 3	R1024	A 6	R3040	E 6	R4070	C 4	R5116	E 2	IC4014	B 4	R1026	C 6	R3041	E 4	R4071	C 5	R5117	D 2
IC4015	B 3	R1027	C 6	R3042	E 4	R4073	D 3	R5133	D 3	IC4016	B 4	R1028	A 5	R3043	E 4	R4074	D 3	R5134	D 3
IC5001	D 3	R1031	A 6	R3044	E 4	R4075	C 3	R902	B 4	IC5004	D 1	R1032	D 4	R3045	E 4	R4076	C 3	R904	A 4
IC5005	C 1	R1033	C 4	R3046	E 4	R4077	C 3	R906	A 5	IC5006	B 1	R1034	C 4	R3047	E 5	R4078	B 3	R907	A 5
IC5007	B 1	R1035	C 4	R3048	D 6	R4079	C 3	RA1001	C 5	IC902	B 4	R1036	D 5	R3049	D 6	R4080	C 4	RA1002	B 6
J1	A 1	R1037	C 5	R3050	E 6	R4081	B 4	RA1003	B 6	J1501	E 6	R1040	C 5	R3051	E 6	R4082	C 4	RA1004	B 6
J2	A 6	R1041	B 6	R3052	E 4	R4083	C 4	RA1009	D 6	J3	A 3	R1042	B 5	R3053	E 4	R4084	B 4	RA1010	A 5
J3001	E 6	R1043	C 5	R3054	E 4	R4095	B 3	RA1011	A 5	J3002	E 5	R1048	A 5	R3055	E 4	R4097	B 3	RA1012	B 5
J5001	E 2	R1050	D 4	R3056	E 4	R4099	A 3	RA1013	B 6	JK1501	E 5	R1051	D 4	R3057	E 4	R4100	C 4	RA1014	B 6
L1001	A 6	R1052	C 4	R3058	D 5	R4101	C 5	RA1015	B 6	L1003	C 5	R1053	C 4	R3059	D 6	R4102	C 4	RA1016	A 5
L1004	B 6	R1054	D 5	R3060	D 6	R4103	C 5	RA1017	A 5	L1501	D 5	R1055	C 5	R3061	E 6	R4104	A 3	XL1001	B 6
L1502	D 5	R1056	D 4	R3062	E 6	R4105	A 3	XL5001	D 3	L1503	D 5	R1057	C 4	R3063	E 6	R4106	A 3	XL5002	D 3
L201	C 6	R1058	C 4	R3064	E 6	R4107	A 3	ZD1001	A 6	L202	C 6	R1059	C 4	R3065	D 6	R4108	C 3	ZD1002	A 6
L3001	E 6	R1060	D 5	R3066	D 6	R4109	D 3	ZD251	D 3	L3002	E 6	R1061	D 5	R3067	D 6	R4110	C 3	ZD252	D 4
L3003	E 6	R1062	C 5	R3068	D 6	R4111	C 3	ZD253	D 3	L3004	E 6	R1063	C 5	R3071	E 4	R4112	C 3	ZD3001	D 6
L3005	E 6	R1064	C 4	R3073	C 4	R4113	C 3	ZD3002	D 6	L3006	E 6	R1065	C 4	R3074	C 4	R4114	B 3	ZD4001	B 4
L3007	E 4	R1066	C 4	R3075	D 6	R4115	B 3	ZD4002	B 4	L3008	E 4	R1067	D 5	R3076	C 6	R4116	B 3	ZD4003	C 4
L3009	E 4	R1068	D 4	R3077	D 6	R4117	B 3	ZD4004	C 4	L3010	E 4	R1069	C 5	R3078	D 6	R4118	A 3	ZD4005	B 4
L3011	E 4	R1070	C 5	R3080	D 6	R4120	C 3	ZD4006	A 3	L3012	E 4	R1071	D 5	R3082	D 6	R4121	B 3	ZD901	A 4
L3013	E 5	R1072	D 5	R3083	D 6	R4122	B 3	ZD902	A 4	L4001	B 3	R1090	D 5	R3084	D 6	R4123	C 3		
L4002	B 3	R1092	C 5	R3085	D 6	R4124	B 3			L5002	E 2	R1501	E 5	R3086	D 6	R4125	B 3		
L5004	D 2	R1502	E 5	R3090	C 4	R4126	B 3			L5006	B 2	R1503	E 5	R3092	D 4	R4127	C 3		
L5008	B 2	R1504	E 5	R3093	D 5	R4141	D 4			L5009	D 2	R1505	E 5	R3094	C 4	R4142	C 4		
L5011	C 2	R1507	E 5	R3095	C 4	R4143	C 4			L5013	B 2	R1508	D 5	R3096	C 4	R4144	C 4		
L5015	A 2	R1509	E 5	R3097	C 4	R4145	C 4			L5029	C 2	R1510	E 5	R3098	C 4	R4146	C 5		
L5030	C 2	R1511	D 6	R3099	C 4	R4147	A 3			L5031	C 2	R1512	E 5	R3100	C 4	R4148	A 3		
L5032	C 2	R1517	D 5	R3101	C 4	R5001	D 3			L901	B 4	R1520	E 5	R3102	C 4	R5003	D 3		
L902	A 5	R1524	D 6	R3103	C 4	R5005	D 3			L903	A 4	R1525	E 5	R3104	D 4	R5006	D 3		
Q1001	C 6	R1527	E 5	R3105	C 4	R5009	D 3			Q1501	E 5	R202	C 6	R3106	C 4	R5009	D 3		

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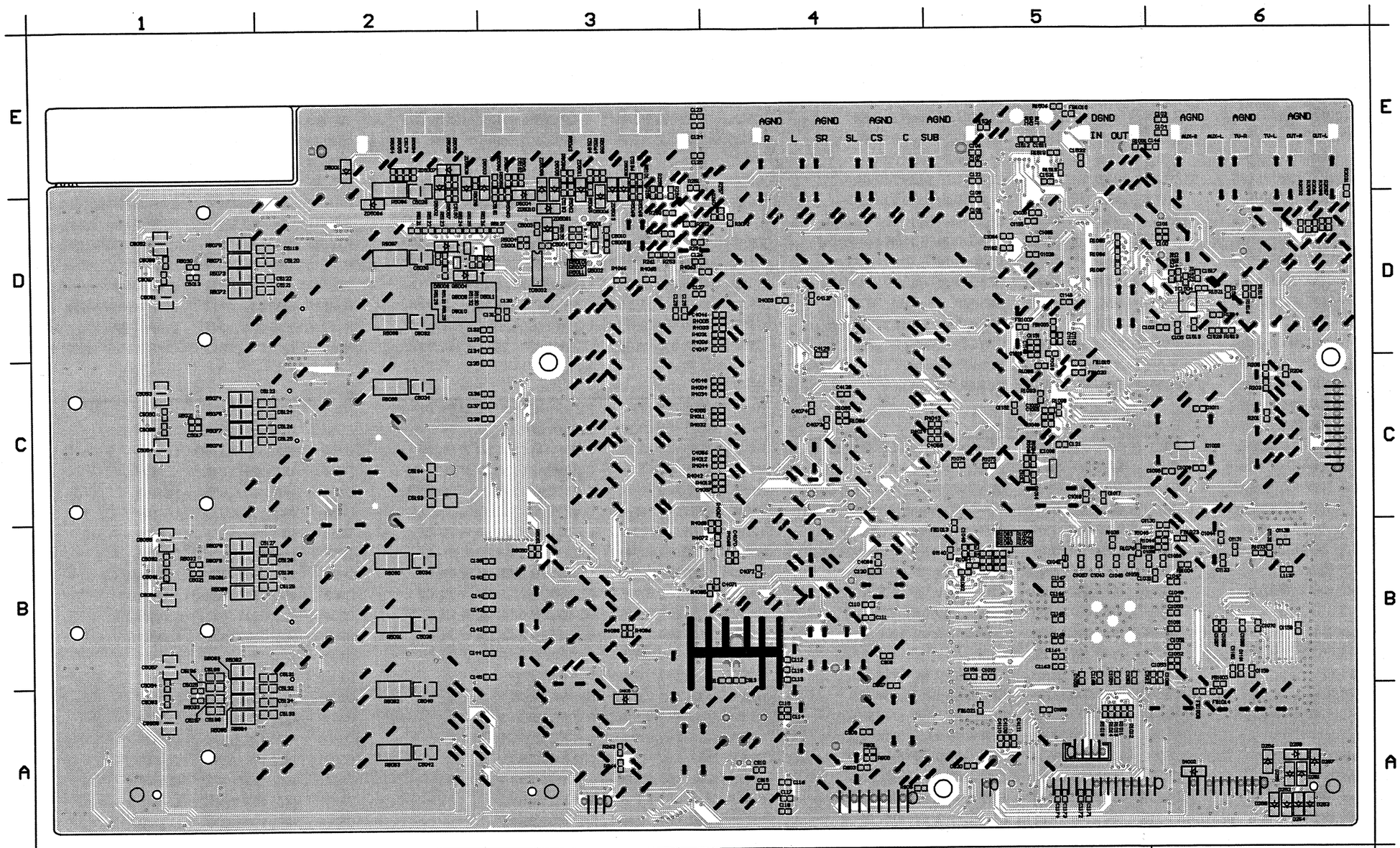
PCB LAYOUT (COPPERSIDE VIEW)



C100	D 6	C102	D 5	C1049	B 5	C1061	B 6	C110	B 4	C1145	D 5	C1161	B 6	C1174	A 5	C130	D 3	C143	B 2	C4046	D 3	C4109	A 5
C1008	C 5	C1020	C 5	C105	D 6	C1062	B 6	C111	B 4	C1147	D 5	C1162	D 5	C118	A 4	C131	D 3	C144	B 2	C4047	D 3	C4110	A 5
C1009	C 6	C1029	D 5	C1050	B 6	C1063	B 5	C112	B 4	C1149	D 5	C1163	B 5	C119	B 4	C132	D 2	C145	B 2	C4048	C 3	C4111	A 5
C101	D 6	C103	E 6	C1051	B 6	C1064	D 5	C1129	B 5	C115	A 4	C1164	B 5	C120	B 4	C133	D 2	C146	E 6	C4055	C 3	C4127	D 4
C1010	B 5	C1030	D 5	C1052	B 6	C1065	D 5	C113	B 4	C1151	D 5	C1165	B 5	C121	C 5	C134	D 2	C1511	E 5	C4056	C 3	C4128	C 4
C1011	C 6	C1031	B 5	C1053	B 6	C1066	A 5	C1130	B 5	C1152	C 5	C1166	B 5	C122	E 5	C135	C 2	C1512	E 5	C4057	C 3	C4129	D 4
C1012	B 5	C104	E 6	C1054	B 5	C1067	B 6	C1131	B 6	C1155	D 5	C1167	B 5	C123	E 3	C136	C 2	C1513	D 6	C4058	C 5	C5001	D 3
C1013	C 5	C1042	B 5	C1055	B 5	C1068	B 6	C1132	B 6	C1156	B 5	C1168	B 5	C124	E 3	C137	C 2	C1514	D 6	C4070	B 4	C5003	D 3
C1014	C 5	C1043	B 5	C1056	B 6	C1069	B 6	C1133	B 6	C1157	B 5	C1169	B 5	C125	E 3	C138	C 2	C1517	D 6	C4071	B 4	C5004	D 3
C1016	C 5	C1044	B 6	C1057	B 5	C107	E 5	C1138	B 6	C1158	B 6	C117	A 4	C126	D 3	C139	B 2	C1528	D 6	C4072	B 4	C5009	D 3
C1017	C 5	C1045	B 5	C1058	B 5	C1070	B 6	C114	A 4	C1159	B 6	C1171	A 5	C127	D 3	C140	B 2	C1529	D 6	C4073	C 4	C5010	D 3
C1018	C 5	C1047	B 6	C1059	B 5	C108	D 5	C1140	B 5	C116	A 4	C1172	A 5	C128	D 3	C141	B 2	C1531	E 5	C4074	C 4	C5013	D 1
C1019	C 5	C1048	B 6	C106	E 5	C109	D 5	C1143	D 5	C1160	B 6	C1173	A 5	C129	D 3	C142	B 2	C1532	E 5	C4080	B 4	C5017	C 1

C5021	B 1	C5054	C 1	C5119	D 2	C5132	A 2	C5197	A 1	D252	A 6	D5005	E 3	FB1014	A 6	Q5005	D 2	R4067	C 4	R5073	D 1	R5127	D 3
C5025	B 1	C5055	B 1	C5120	D 2	C5133	A 2	C5198	A 1	D253	A 6	D5006	D 3	FB1015	C 5	R1011	A 5	R4068	B 4	R5074	C 1	R5128	D 2
C5028	D 2	C5056	B 1	C5121	D 2	C5134	A 2	C5199	B 1	D254	A 6	D5008	E 3	FB1020	C 5	R1012	A 5	R4069	B 3	R5075	C 1	R5129	D 2
C5030	D 2	C5057	B 1	C5122	D 2	C5179	E 2	C907	A 4	D255	A 6	D5009	D 2	FB1021	A 5	R1013	A 5	R4072	B 3	R5076	C 1	R5130	D 2
C5032	D 2	C5058	A 1	C5123	C 2	C5180	D 2	C908	B 4	D256	A 6	D5010	D 2	FB1023	B 6	R1014	A 5	R4085	B 3	R5077	C 1	R5131	D 2
C5034	C 2	C5087	D 1	C5124	C 2	C5181	D 3	C909	A 4	D257	A 6	D5011	D 3	IC1002	C 6	R1015	A 5	R4096	B 3	R5078	B 1	R5132	D 2
C5036	B 2	C5088	D 1	C5125	C 2	C5182	E 3	C910	A 4	D258	A 6	FB1003	B 6	IC1006	C 5	R1016	C 5	R4098	B 3	R5079	B 1	R5135	D 3
C5038	B 2	C5089	C 1	C5126	C 2	C5183	D 3	C911	B 4	D259	A 6	FB1004	B 6	IC1504	D 6	R1038	B 5	R5004	D 3	R5080	B 1	R900	A 4
C5040	A 2	C5090	C 1	C5127	B 2	C5184	E 3	C913	B 4	D4005	A 3	FB1005	D 5	IC5002	D 3	R1044	B 5	R5007	D 3	R5081	B 1	R901	A 4
C5042	A 2	C5091	B 1	C5128	B 2	C5186	E 3	C915	A 4	D5001	E 2	FB1007	D 5	L1137	B 6	R1045	B 5	R5010	D 3	R5082	B 1	R903	A 4
C5051	D 1	C5092	B 1	C5129	B 2	C5193	C 2	C920	A 5	D5002	D 2	FB1009	A 6	Q5001	D 3	R1046	C 5	R5011	D 3	R5083	B 1	R905	A 4
C5052	D 1	C5093	A 1	C5130	B 2	C5194	C 2	D1002	A 6	D5003	E 3	FB1010	E 5	Q5002	D 3	R1049	C 5	R5030	D 1	R5084	A 1	ZD5001	D 3
C5053	C 1	C5094	B 1	C5131	B 2	C5196	B 1	D251	A 6	D5004	D 3	FB1013	B 5	Q5004	D 2	R1073	B 6	R5031	C 1	R5085	A 1	ZD5006	D 2
																R1074	C 5	R5032	B 1	R5086	D 2	ZD5007	E 2
																R1075	C 5	R5033	A 1	R5087	D 2	ZD5008	E 2
																R1076	B 5	R5050	B 3	R5088	D 2	ZD5009	E 3
																R1077	B 5	R5051	B 3	R5089	C 2	ZD5010	D 3
																R1078	B 5	R5054	E 2	R5090	B 2	ZD5011	E 3
																R1079	B 5	R5055	E 2	R5091	B 2	ZD5013	D 3
																R1080	B 5	R5056	E 2	R5092	A 2		
																R1081	B 5	R5057	D 2	R5093	A 2		
																R1082	B 5	R5058	E 2	R5094	E 2		
																R1083	B 5	R5059	E 3	R5095	E 2		
																R1084	B 5	R5060	D 3	R5096	E 3		
																R1085	D 5	R5061	E 3	R5097	E 3		
																R1086	D 5	R5062	D 3	R5098	E 3		
																R1087	D 5	R5063	E 3	R5099	E 3		
																R1088	C 5	R5064	E 3	R5101	E 3		
																R1089	C 5	R5065	D 3	R5121	D 2		
																R1091	E 5	R5068	D 3	R5122	D 2		
																R1093	C 5	R5069	D 3	R5123	D 2		
																R1094	C 5	R5070	D 1	R5124	D 2		
																R1095	C 4	R5071	D 1	R5125	D 2		
																R1096	C 4	R5072	D 1	R5126	D 3		
																R1506	E 5	R5073	D 1	R5127	D 3		
																R1513	D 6	R5074	C 1	R5128	D 2		
																R1514	D 6	R5075	C 1	R5129	D 2		
																R1515	D 6	R5076	C 1	R5130	D 2		
																R1516	D 6	R5077	C 1	R5131	D 2		
																R1518	E 5	R5078	B 1	R5132	D 2		
																R1519	E 5	R5079	B 1	R5135	D 3		
																R1521	D 6	R5080	B 1	R900	A 4		
																R1522	D 6	R5081	B 1	R901	A 4		
																R1523	D 6	R5082	B 1	R903	A 4		
																R1526	E 5	R5083	B 1	R905	A 4		
																R201	C 6	R5084	A 1	ZD5001	D 3		
																R203	C 6	R5085	A 1	ZD5006	D 2		
																R205	C 6	R5086	D 2	ZD5007	E 2		
																R206	C 6	R5087	D 2	ZD5008	E 2		
																R251	E 3	R5088	D 2	ZD5009	E 3		
																R252	D 3	R5089	C 2	ZD5010	D 3		
																R253	D 3	R5090	B 2	ZD5011	E 3		
																R254	D 3	R5091	B 2	ZD5013	D 3		
																R255	E 3	R5092	A 2				
																R256	E 3	R5093	A 2				
																R257	E 4	R5094	E 2				
																R258	D 3	R5095	E 2				
																R259	E 3	R5096	E 3				
																R260	D 4	R5097	E 3				
																R261	D 3	R5098	E 3				
																R263	A 3	R5099	E 3				
																R264	A 3	R5101	E 3				
																R267	D 3	R5121	D 2				
																R3031	E 6	R5122	D 2				
																R3032	E 6	R5123	D 2				
																R3072	D 4	R5124	D 2				
																R3087	E 6	R5125	D 2				
																R3088	E 6	R5126	D 3				
																R3089	E 6	R5127	D 3				
																R3091	E 6	R5128	D 2				
																R4003	D 4	R5129	D 2				
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																R4005	D 3	R5131	D 2				
																R4006	D 3	R5132	D 2				
																R4011	C 3	R5135	D 3				
																R4012	C 3	R900	A 4				
																R4013	C 3	R901	A 4				
																R4014	C 4	R903	A 4				
																R4031	D 3	R905	A 4				
																R4032	C 3	ZD5001	D 3				
																R4033	D 3	ZD5006	D 2				
																R4034	C 3	ZD5007	E 2				
																R4042	C 3	ZD5008	E 2				
																R4043	C 4	ZD5009	E 3				
																R4044	C 3	ZD5010	D 3				
																R4063	D 3	ZD5011	E 3				
																R4065	D 3	ZD5013	D 3				
																R4066	D 3						

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ELECTRICAL PARTS LIST - MAIN BOARD

ELECTRICAL PARTS LIST - MAIN BOARD

MISCELLANEOUS

CN201	9965 000 15862	CONNECTOR B2B-XH-A 2P
CN5001	9965 000 19399	CONNECTOR 3P CL3962WVO
CN901	9965 000 23658	CONNECTOR B9B-XH-A 9P
FB1001	9965 000 12470	BEAD FERITE 100R/AT 100MHz
FB1002	9965 000 12470	BEAD FERITE 100R/AT 100MHz
FB1003	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1004	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1005	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1006	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1007	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1009	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1010	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1011	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1013	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1014	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1015	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1016	9965 000 12470	BEAD FERITE 100R/AT 100MHz
FB1019	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1020	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1023	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB1024	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
FB5001	9965 000 24073	CHIP BEAD 100R AT 100MHz 10%
FB901	9965 000 12470	BEAD FERITE 100R/AT 100MHz
FB902	9965 000 12470	BEAD FERITE 100R/AT 100MHz
FB903	9965 000 12470	BEAD FERITE 100R/AT 100MHz
FB904	9965 000 12470	BEAD FERITE 100R/AT 100MHz
FB905	9965 000 12470	BEAD FERITE 100R/AT 100MHz
FB906	9965 000 12470	BEAD FERITE 100R/AT 100MHz
J1501	9965 000 23924	RCA JACK 2P BLKx2
J3001	9965 000 24074	RCA JACK 6P WHTx3/REDx3
J3002	9965 000 24075	RCA JACK 7P
J5001	9965 000 24076	SPEAKER JACK 14P
JK1501	9965 000 24077	OPTICAL RECEIVER DLR1111
L1003	9965 000 15871	CHOKE 10uH 10%
L1004	9965 000 15871	CHOKE 10uH 10%
L1137	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
L1501	9965 000 15871	CHOKE 10uH 10%
L1503	9965 000 15871	CHOKE 10uH 10%
L201	9965 000 15871	CHOKE 10uH 10%
L202	9965 000 15871	CHOKE 10uH 10%
L3001	9965 000 15871	CHOKE 10uH 10%
L3002	9965 000 15871	CHOKE 10uH 10%
L3003	9965 000 15871	CHOKE 10uH 10%
L3004	9965 000 15871	CHOKE 10uH 10%
L3005	9965 000 15871	CHOKE 10uH 10%
L3006	9965 000 15871	CHOKE 10uH 10%
L3007	9965 000 15871	CHOKE 10uH 10%
L3008	9965 000 15871	CHOKE 10uH 10%
L3009	9965 000 15871	CHOKE 10uH 10%
L3010	9965 000 15871	CHOKE 10uH 10%
L3011	9965 000 15871	CHOKE 10uH 10%
L3012	9965 000 15871	CHOKE 10uH 10%
L3013	9965 000 15871	CHOKE 10uH 10%
L4001	9965 000 15931	INDUCTOR 100uH 10%
L4002	9965 000 15931	INDUCTOR 100uH 10%
L5002	9965 000 23893	INDUCTOR 33uH 20% 6A
L5004	9965 000 23893	INDUCTOR 33uH 20% 6A
L5006	9965 000 23893	INDUCTOR 33uH 20% 6A
L5008	9965 000 23893	INDUCTOR 33uH 20% 6A
L5009	9965 000 23893	INDUCTOR 33uH 20% 6A
L5011	9965 000 23893	INDUCTOR 33uH 20% 6A
L5013	9965 000 23893	INDUCTOR 33uH 20% 6A
L5015	9965 000 23893	INDUCTOR 33uH 20% 6A
L5029	9965 000 12470	BEAD FERITE 100R/AT 100MHz
L5030	9965 000 12470	BEAD FERITE 100R/AT 100MHz
L5031	9965 000 12470	BEAD FERITE 100R/AT 100MHz
L5032	9965 000 12470	BEAD FERITE 100R/AT 100MHz
L901	9965 000 16694	INDUCTOR 6uH 13.5TS 2UEW
L902	9965 000 16694	INDUCTOR 6uH 13.5TS 2UEW
XL1001	9965 000 23929	CRYSTAL 27MHz HC-49/US
XL5001	9965 000 23595	RES 2P 600kHz
XL5002	9965 000 23596	RES 2P 700kHz

CAPACITORS

C917	9965 000 23605	COND MYLAR 0.01uF 100V 5%
C918	9965 000 23605	COND MYLAR 0.01uF 100V 5%
C4103	9965 000 23932	COND MYLAR 0.0082uF 100V 5%
C4104	9965 000 23932	COND MYLAR 0.0082uF 100V 5%
C4105	9965 000 23659	COND MYLAR 0.015uF 100V 5%
C4106	9965 000 23659	COND MYLAR 0.015uF 100V 5%
C5028	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5030	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5032	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5034	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5036	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5038	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5040	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5042	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5051	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5052	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5053	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5054	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5055	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5056	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5057	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5058	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5059	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5060	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5061	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5062	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5063	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5064	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5065	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5066	9965 000 23603	CHIP CAP 0.1uF 100V 20%
C5119	9965 000 23896	CHIP CAP 560pF 100V 10%
C5120	9965 000 23896	CHIP CAP 560pF 100V 10%
C5121	9965 000 23896	CHIP CAP 560pF 100V 10%
C5122	9965 000 23896	CHIP CAP 560pF 100V 10%
C5123	9965 000 23896	CHIP CAP 560pF 100V 10%
C5124	9965 000 23896	CHIP CAP 560pF 100V 10%
C5125	9965 000 23896	CHIP CAP 560pF 100V 10%
C5126	9965 000 23896	CHIP CAP 560pF 100V 10%
C5127	9965 000 23896	CHIP CAP 560pF 100V 10%
C5128	9965 000 23896	CHIP CAP 560pF 100V 10%
C5129	9965 000 23896	CHIP CAP 560pF 100V 10%
C5130	9965 000 23896	CHIP CAP 560pF 100V 10%
C5131	9965 000 23896	CHIP CAP 560pF 100V 10%
C5132	9965 000 23896	CHIP CAP 560pF 100V 10%
C5133	9965 000 23896	CHIP CAP 560pF 100V 10%
C5134	9965 000 23896	CHIP CAP 560pF 100V 10%
C5165	9965 000 23933	COND ELECT 2200uF 35V 20%
C5166	9965 000 23933	COND ELECT 2200uF 35V 20%

RESISTORS

R266	9965 000 24078	RESISTOR 100R 1/2 W 5% CF
R902	4822 053 11229	22R 5% 2W
R904	9965 000 23936	RESISTOR 220R 1/4 W 5% CF
R1041	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
R1042	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
R1043	9965 000 24072	CHIP BEAD 100R AT 100MHz 10%
R3067	9965 000 23940	RESISTOR 470R 1/4 W 5% CF
R3068	9965 000 23940	RESISTOR 470R 1/4 W 5% CF
R4080	9965 000 23936	RESISTOR 220R 1/4 W 5% CF
R4081	9965 000 23936	RESISTOR 220R 1/4 W 5% CF
R4082	9965 000 23936	RESISTOR 220R 1/4 W 5% CF
R4083	9965 000 23936	RESISTOR 220R 1/4 W 5% CF
R4084	9965 000 24079	RESISTOR 180R 1/4 W 5% CF
R5070	4822 051 10518	5R1 5% 0,25W
R5071	4822 051 10518	5R1 5% 0,25W
R5072	4822 051 10518	5R1 5% 0,25W
R5073	4822 051 10518	5R1 5% 0,25W
R5074	4822 051 10518	5R1 5% 0,25W
R5075	4822 051 10518	5R1 5% 0,25W
R5076	4822 051 10518	5R1 5% 0,25W
R5077	4822 051 10518	5R1 5% 0,25W
R5078	4822 051 10518	5R1 5% 0,25W
R5079	4822 051 10518	5R1 5% 0,25W
R5080	4822 051 10518	5R1 5% 0,25W
R5081	4822 051 10518	5R1 5% 0,25W
R5082	4822 051 10518	5R1 5% 0,25W
R5083	4822 051 10518	5R1 5% 0,25W
R5084	4822 051 10518	5R1 5% 0,25W
R5085	4822 051 10518	5R1 5% 0,25W
R5086	9965 000 23608	CHIP RES 22R 1/2W 5%
R5087	9965 000 23608	CHIP RES 22R 1/2W 5%
R5088	9965 000 23608	CHIP RES 22R 1/2W 5%
R5089	9965 000 23608	CHIP RES 22R 1/2W 5%
R5090	9965 000 23608	CHIP RES 22R 1/2W 5%
R5091	9965 000 23608	CHIP RES 22R 1/2W 5%
R5092	9965 000 23608	CHIP RES 22R 1/2W 5%
R5093	9965 000 23608	CHIP RES 22R 1/2W 5%
RA1001	9965 000 23612	CHIP ARRAY 4x33Rx4 1/16W 5%
RA1002	9965 000 23612	CHIP ARRAY 4x33Rx4 1/16W 5%
RA1003	9965 000 23612	CHIP ARRAY 4x33Rx4 1/16W 5%
RA1004	9965 000 23613	CHIP ARRAY 4x4.7k 1/16W 5%
RA1009	9965 000 23612	CHIP ARRAY 4x33Rx4 1/16W 5%
RA1010	9965 000 23612	CHIP ARRAY 4x33Rx4 1/16W 5%
RA1011	9965 000 23613	CHIP ARRAY 4x4.7k 1/16W 5%
RA1012	9965 000 23612	CHIP ARRAY 4x33Rx4 1/16W 5%
RA1013	9965 000 23614	CHIP ARRAY 10Rx4 1/16 W 5%
RA1014	9965 000 23614	CHIP ARRAY 10Rx4 1/16 W 5%
RA1015	9965 000 23614	CHIP ARRAY 10Rx4 1/16 W 5%
RA1016	9965 000 23941	CHIP ARRAY 47k 1/16W 5%
RA1017	9965 000 23613	CHIP ARRAY 4x4.7k 1/16W 5%

DIODES

D251	4822 130 83338	LL4148
D252	4822 130 83338	LL4148
D253	4822 130 83338	LL4148
D254	4822 130 83338	LL4148
D255	4822 130 83338	LL4148
D256	4822 130 83338	LL4148
D257	4822 130 83338	LL4148
D258	4822 130 83338	LL4148
D902	4822 130 31438	1N4001G
D903	4822 130 31438	1N4001G
D904	4822 130 31438	1N4001G
D905	4822 130 31438	1N4001G
D1001	4822 130 83338	LL4148
D1002	4822 130 83338	LL4148
D4001	4822 130 83338	LL4148
D4003	4822 130 83338	LL4148
D4004	4822 130 83338	LL4148
D5001	4822 130 83338	LL4148
D5002	4822 130 83338	LL4148
D5003	4822 130 83338	LL4148
D5004	4822 130 83338	LL4148
D5005	4822 130 83338	LL4148
D5006	4822 130 83338	LL4148
D5008	4822 130 83338	LL4148
D5009	4822 130 83338	LL4148
D5010	4822 130 83338	LL4148
D5011	4822 130 83338	LL4148
ZD251	4822 130 34233	BZX79-B5V1
ZD252	4822 130 80272	DIODE ZENR 6.9-7.2V 0.5W
ZD253	9965 000 24080	DIODE ZENR 9.7-10.1V 0.5W
ZD902	9965 000 12554	DIODE ZENR 3.8-4.0V 0.5W
ZD1001	4822 130 80272	DIODE ZENR 6.9-7.2V 0.5W

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ELECTRICAL PARTS LIST - MAIN BOARD

DIODES

ZD1002	4822 130 80272	DIODE ZENR 6.9-7.2V 0.5W
ZD3001	4822 130 34233	BZX79-B5V1
ZD3002	4822 130 34233	BZX79-B5V1
ZD4001	4822 130 80272	DIODE ZENR 6.9-7.2V 0.5W
ZD4002	4822 130 80272	DIODE ZENR 6.9-7.2V 0.5W
ZD4003	4822 130 34233	BZX79-B5V1
ZD4004	4822 130 34233	BZX79-B5V1
ZD4005	4822 130 80272	DIODE ZENR 6.9-7.2V 0.5W
ZD4006	9965 000 20283	DIODE ZENR 6.4-6.7V 0.5W
ZD5001	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD5006	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD5007	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD5008	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD5009	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD5010	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD5011	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD5013	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W

TRANSISTORS & INTEGRATED CIRCUITS

Q201	4822 130 63876	2SA733R
Q202	4822 130 63876	2SA733R
Q203	4822 130 41198	2SC945P
Q204	4822 130 41198	2SC945P
Q206	4822 130 41651	2SC2001L
Q251	4822 130 63876	2SA733R
Q252	4822 130 63876	2SA733R
Q253	4822 130 41198	2SC945P
Q254	4822 130 41198	2SC945P
Q255	4822 130 41198	2SC945P
Q256	4822 130 41198	2SC945P
Q901	4822 130 42306	2SD882Q
Q902	4822 130 41198	2SC945P
Q1001	4822 130 41198	2SC945P
Q1501	4822 130 41198	2SC945P
Q1503	4822 130 63876	2SA733R
Q3001	4822 130 63876	2SA733R
Q3002	4822 130 43818	2SC2878-A
Q3003	4822 130 43818	2SC2878-A
Q4001	4822 130 41651	2SC2001L
Q4002	4822 130 43818	2SC2878-A
Q4003	4822 130 43818	2SC2878-A
Q4004	4822 130 43818	2SC2878-A
Q4005	4822 130 43818	2SC2878-A
Q4006	4822 130 43818	2SC2878-A
Q4007	4822 130 43818	2SC2878-A
Q4008	4822 130 41198	2SC945P
Q5001	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q5002	9965 000 14175	2SA733Q,P
Q5003	4822 130 43818	2SC2878-A
Q5004	9965 000 20268	XISTR NPN SMT TYPE (2SC1623)
Q5005	9965 000 14175	2SA733Q,P
IC902	5322 209 81856	IC 3 PIN LM7912CT
IC1001	9965 000 23948	IC 14PIN 74HCU04D
IC1002	9965 000 15887	IC 3 PIN RT9164-33CLR
IC1004	9965 000 24081	IC 32PIN EN29F040A-70PC PDIP
IC1005	9965 000 23945	IC 208PIN ES6128F ESS PQFP
IC1006	9965 000 15888	IC 3 PIN RT9164-CG 2.8V
IC1007	9965 000 12490	IC 28PIN CS4360KZ
IC1009	9965 000 12491	IC 8 PIN JRC4558D JRC
IC1010	9965 000 12491	IC 8 PIN JRC4558D JRC
IC1011	9965 000 12491	IC 8 PIN JRC4558D JRC
IC1012	9965 000 12491	IC 8 PIN JRC4558D JRC
IC1017	9965 000 24082	IC SOCKET 32PIN P=2.54 W=15.2
IC1018	9965 000 19386	IC 16PIN CS4340
IC1030	9965 000 15884	IC 8 PIN AT24C02N-10SI-2.7
IC1031	9965 000 24083	IC 54PIN IS42S16400A-6T
IC1031	9940 000 00029	IC 54PIN SD41620HGT-6
IC1501	9965 000 23948	IC 14PIN 74HCU04D
IC1502	9965 000 24084	IC 14PIN 74F125
IC1503	9965 000 17381	IC 14PIN WM8738ED
IC3001	9965 000 12510	IC 16PIN TC4052BFN CHIP
IC3002	9965 000 12491	IC 8 PIN JRC4558D JRC
IC3003	9965 000 12491	IC 8 PIN JRC4558D JRC
IC3004	9965 000 12491	IC 8 PIN JRC4558D JRC
IC3005	9965 000 12491	IC 8 PIN JRC4558D JRC
IC3006	9965 000 12491	IC 8 PIN JRC4558D JRC
IC3007	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4001	9965 000 12492	IC 16PIN TC4053BFN CHIP
IC4002	9965 000 12492	IC 16PIN TC4053BFN CHIP
IC4003	9965 000 12492	IC 16PIN TC4053BFN CHIP
IC4004	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4005	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4006	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4007	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4008	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4009	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4010	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4011	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4012	9965 000 12491	IC 8 PIN JRC4558D JRC
IC4014	9965 000 12514	IC 42PIN M62446FP
IC4015	9965 000 17384	IC 8 PIN TP5228
IC4016	9965 000 17385	IC 8 PIN PT2259
IC5001	9965 000 23948	IC 14PIN 74HCU04D
IC5002	9965 000 22229	IC 14PIN HEF4013BT
IC5004	9352 719 94518	IC 24PIN TDA8924TH
IC5005	9352 719 94518	IC 24PIN TDA8924TH
IC5006	9352 719 94518	IC 24PIN TDA8924TH
IC5007	9352 719 94518	IC 24PIN TDA8924TH

Note : Only the parts mentioned in this list are normal service spare parts.

KEY / POWER SW BOARD

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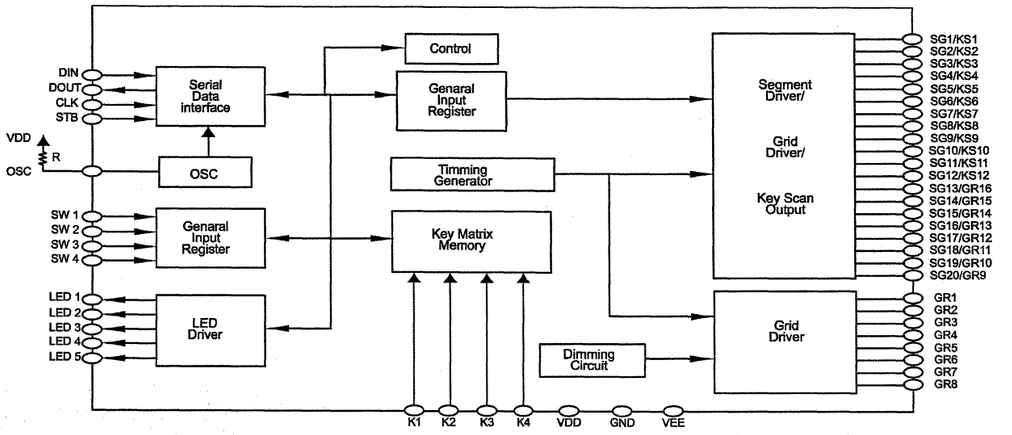
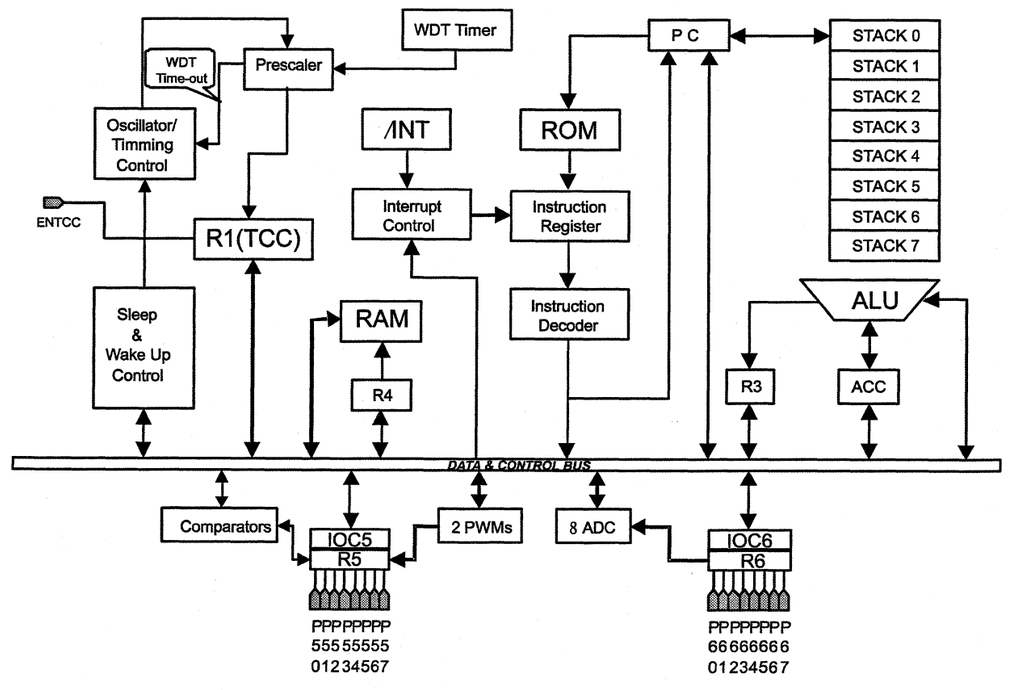
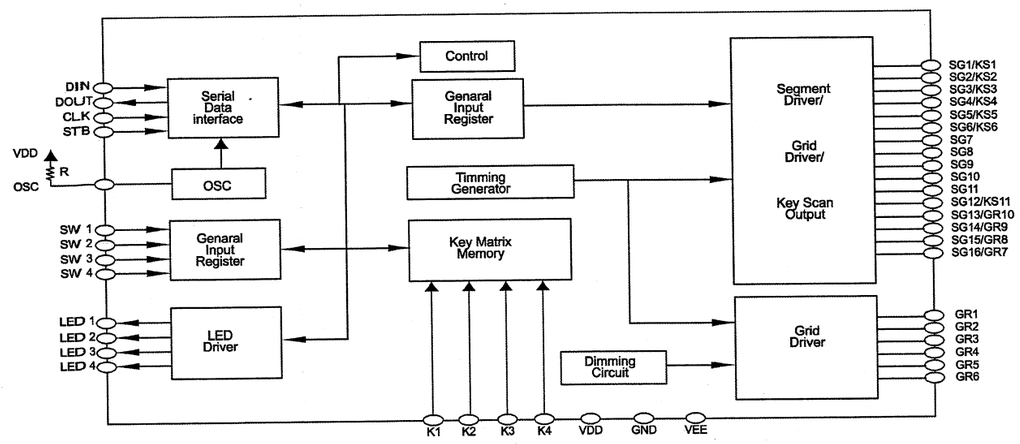
PT6312 INTERNAL BLOCK DIAGRAM



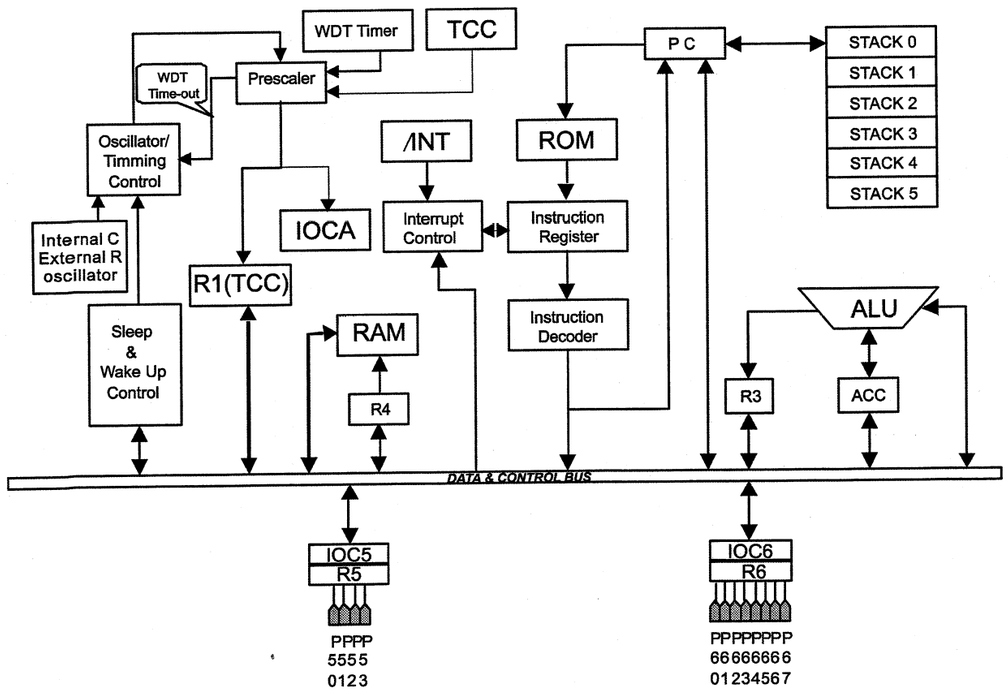
EM78P459AM INTERNAL BLOCK DIAGRAM



PT6311 INTERNAL BLOCK DIAGRAM



EM78P156ELP INTERNAL BLOCK DIAGRAM



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OPTICAL FUNCTION

IC201 (PT6311)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	0	0	0	4.3	4.3	0	3.3	2.8	0	0	0	0	4.5	-23	-23	-26	-23	-26	-23
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	-23	-26	-21	-26	-26	-23	-23	-23	-26	-26	-26	-26	0	-26	-23	-23	-23	-23	-23	-23
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52								
Voltage	-23	-23	-23	-23	4.5	4.5	0	4.5	0	0	0	2.5								

IC202 (PT6312)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	1.5	1.5	1.5	1.5	1.2	1.2	0	2	1	1.6	1.6	1.6	1.6	4.3	-25	-25	-25	-25	-25	-25
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	-26	-26	-26	-5.6	-26	-26	-26	-26	-26	-26	-23	-23	-23	-23	-23	-23	-23	4.3	4.3	4.3
PIN NO	41	42	43	44																
Voltage	4.3	4.3	0	2.5																

IC203 (EM78P459AM)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	4.3	0	0	4.3	0	0	0	0	0	0	0	4.4	0	0	2	4.5	4.5	4.5	4.5
PIN NO	21	22	23	24																
Voltage	4.5	1	1	4.5																

IC204 (EM78P156ELP)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Voltage	5	5	0	5	0	5	5	0	4	0	5	0	0	5	2.3	2	4.3	0		

TUNER FUNCTION

IC201 (PT6311)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	0	0	0	4.3	4.3	0	3.3	2.8	0	0	0	0	4.5	-25	-16	-14	-14	-21	-26
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	-23	-21	-14	-18	-14	-16	-26	-26	-24	-19	-26	-23	0	-26	-24	-24	-24	-24	-24	-24
PIN NO	41	42	43	44	45	46	47	48	49	50	51	52								
Voltage	-24	-24	-24	-24	4.5	4.5	0	4.5	0	0	0	2.5								

IC202 (PT6312)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0.6	0.6	0.6	0.6	1.2	1.2	0	2	1	1.6	1.6	1.7	1.7	4.3	-24	-24	-24	-24	-24	-24
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	-24	-24	-24	-5.6	-26	-26	-26	-26	-26	-26	-23	-23	-23	-23	-23	-23	-23	4.3	4.3	4.3
PIN NO	41	42	43	44																
Voltage	4.3	4.3	0	2.5																

IC203 (EM78P459AM)

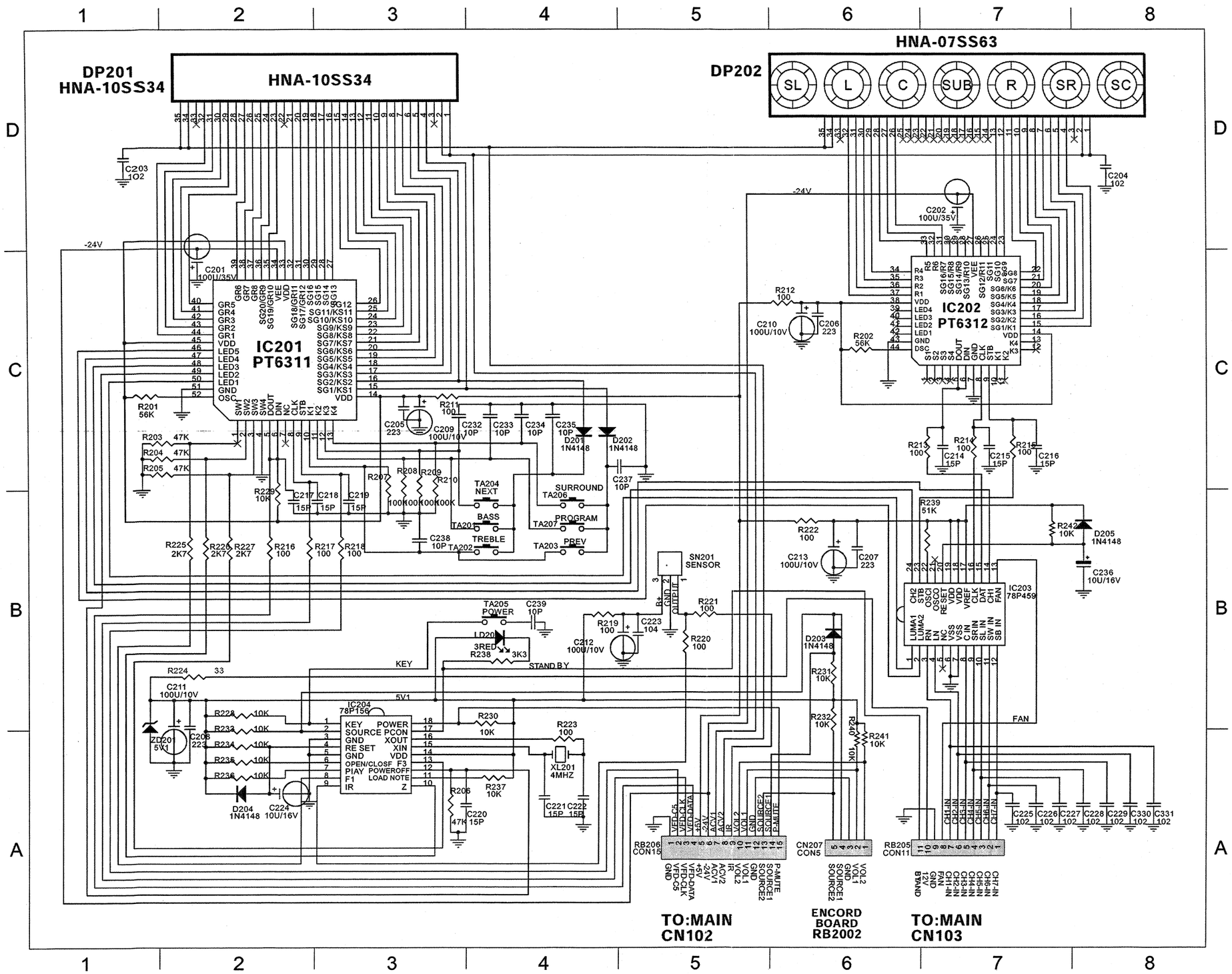
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	4.3	0	0	4.3	0	0	0	0	0	0	0	4.3	0	1.3	2	4.5	4.5	4.5	4.5
PIN NO	21	22	23	24																
Voltage	4.5	1	1	4.5																

IC204 (EM78P156ELP)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Voltage	5	5	0	5	0	5	5	0	4	0	5	0	0	5	2.3	2	4.3	0		

6-3

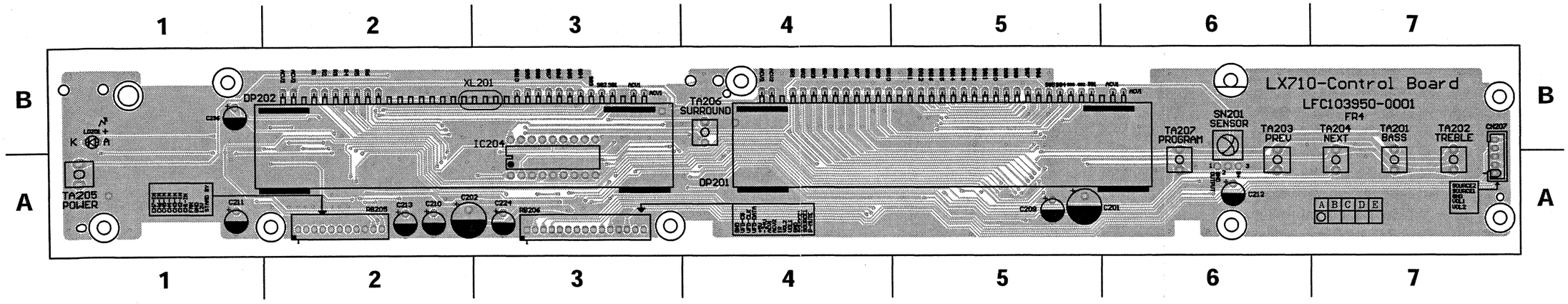
CIRCUIT DIAGRAM



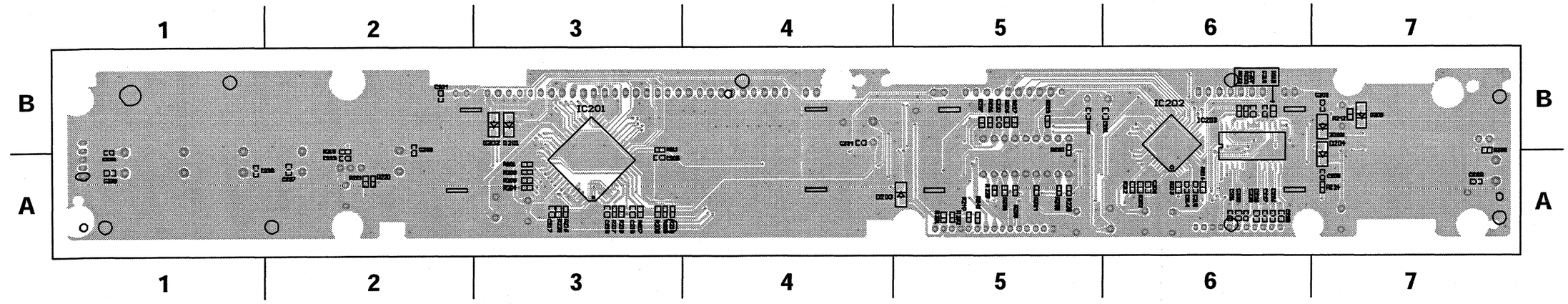
C201	C 2	R215	C 7
C202	D 6	R216	B 2
C203	D 1	R217	B 2
C204	D 7	R218	B 2
C205	C 3	R219	B 4
C206	C 5	R220	B 5
C207	B 6	R221	B 5
C208	B 2	R222	B 5
C209	C 3	R223	B 4
C210	C 5	R224	B 1
C211	B 1	R225	B 1
C212	B 4	R226	B 2
C213	B 5	R227	B 2
C214	C 6	R228	B 2
C215	C 6	R229	C 2
C216	C 7	R230	B 3
C217	C 2	R231	B 5
C218	C 2	R232	B 5
C219	C 3	R233	B 2
C220	A 3	R234	B 2
C221	A 4	R235	B 2
C222	A 4	R236	A 2
C223	B 4	R237	A 3
C224	A 2	R238	B 3
C225	A 7	R239	C 6
C226	A 7	R240	B 6
C227	A 7	R241	B 6
C228	A 7	R242	B 7
C229	A 7	RB205	A 6
C232	C 3	RB206	A 4
C233	C 3	SN201	B 5
C234	C 4	TA201	B 3
C235	C 4	TA202	B 3
C236	B 7	TA203	B 4
C237	C 4	TA204	C 3
C238	B 3	TA205	B 3
C239	B 4	TA206	C 4
C330	A 7	TA207	B 4
C331	A 7	XL201	B 4
CN207	A 5	ZD201	B 1
D201	C 4		
D202	C 4		
D203	B 5		
D204	A 2		
D205	B 7		
DP201	D 1		
DP202	D 5		
IC201	C 2		
IC202	C 6		
IC203	B 7		
IC204	B 2		
LD201	B 3		
R201	C 1		
R202	C 6		
R203	C 1		
R204	C 1		
R205	C 1		
R206	A 3		

6-4

PCB LAYOUT VIEW



C201	A 6	C236	B 1	SN201	B 6	XL201	B 2
C202	A 2	CN207	B 7	TA201	B 7		
C209	A 5	DP201	A 4	TA202	B 7		
C210	A 2	DP202	B 1	TA203	B 6		
C211	A 1	IC204	B 3	TA204	B 7		
C212	A 6	LD201	B 1	TA205	A 1		
C213	A 2	RB205	A 2	TA206	B 4		
C224	A 3	RB206	A 3	TA207	B 6		



C203	B 7	C216	B 6	C225	A 6	C235	A 1	D203	A 4	R203	A 3	R211	A 3	R219	A 2	R227	B 5	R235	A 5	ZD201	B 7
C204	B 2	C217	A 3	C226	A 6	C237	A 2	D204	B 7	R204	A 3	R212	A 6	R220	A 2	R228	A 5	R236	A 5		
C205	A 3	C218	A 3	C227	A 6	C238	A 1	D205	B 7	R205	A 3	R213	A 6	R221	A 2	R229	A 3	R237	B 5		
C206	A 6	C219	A 3	C228	A 6	C239	A 7	IC201	B 3	R206	B 5	R214	A 6	R222	B 6	R230	A 5	R238	A 7		
C207	B 6	C220	B 5	C229	A 6	C330	A 6	IC202	B 6	R207	A 3	R215	B 6	R223	B 5	R231	A 5	R239	B 6		
C208	A 7	C221	B 6	C232	A 1	C331	A 6	IC203	B 6	R208	A 3	R216	A 3	R224	A 7	R232	A 5	R240	A 5		
C214	A 6	C222	B 5	C233	A 2	D201	B 3	R201	A 3	R209	A 3	R217	A 3	R225	A 5	R233	A 5	R241	A 5		
C215	A 6	C223	A 2	C234	B 4	D202	B 3	R202	A 6	R210	A 3	R218	A 3	R226	B 5	R234	A 5	R242	B 7		

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ELECTRICAL PARTS LIST - KEY & POWER SWITCH BOARD

MISCELLANEOUS

DP201	9965 000 24085	VFD 74x9MM HNA-10SS34
DP202	9965 000 24086	VFD 73.5x8.7MM HNA-07SS63
LD201	9965 000 24087	LED 3DIA WHITE DIFFUSE RD 2P
SN201	9965 000 23591	IRT RECEIV IRM-2038F4
SN201	9965 000 24088	IRT RECEIVER IRM-2638F4
TA201	9965 000 24089	AI TACT SW H=5MM 160GF
TA202	9965 000 24089	AI TACT SW H=5MM 160GF
TA203	9965 000 24089	AI TACT SW H=5MM 160GF
TA204	9965 000 24089	AI TACT SW H=5MM 160GF
TA205	9965 000 24089	AI TACT SW H=5MM 160GF
TA206	9965 000 24089	AI TACT SW H=5MM 160GF
TA207	9965 000 24089	AI TACT SW H=5MM 160GF
XL201	9965 000 23590	CRYSTAL 4MHz HC-49US +/-15PPM

DIODES

D201	4822 130 83338	LL4148
D202	4822 130 83338	LL4148
D203	4822 130 83338	LL4148
D204	4822 130 83338	LL4148
D205	4822 130 83338	LL4148
ZD201	9965 000 21177	CHIP ZENER 5.1V 5% 0.5W (E1)

TRANSISTORS & INTEGRATED CIRCUITS

IC201	9965 000 12550	IC 52 PIN PT6311(PTC)
IC202	9965 000 17446	IC 44 PIN PT6312
IC203	9965 000 24090	IC 20 PIN EM78P459AM SOP ELAN
IC204	9965 000 24091	IC 18 PIN EM78P156ELP

Note : Only the parts mentioned in this list are normal service spare parts.

SOURCE + PHONE BOARD

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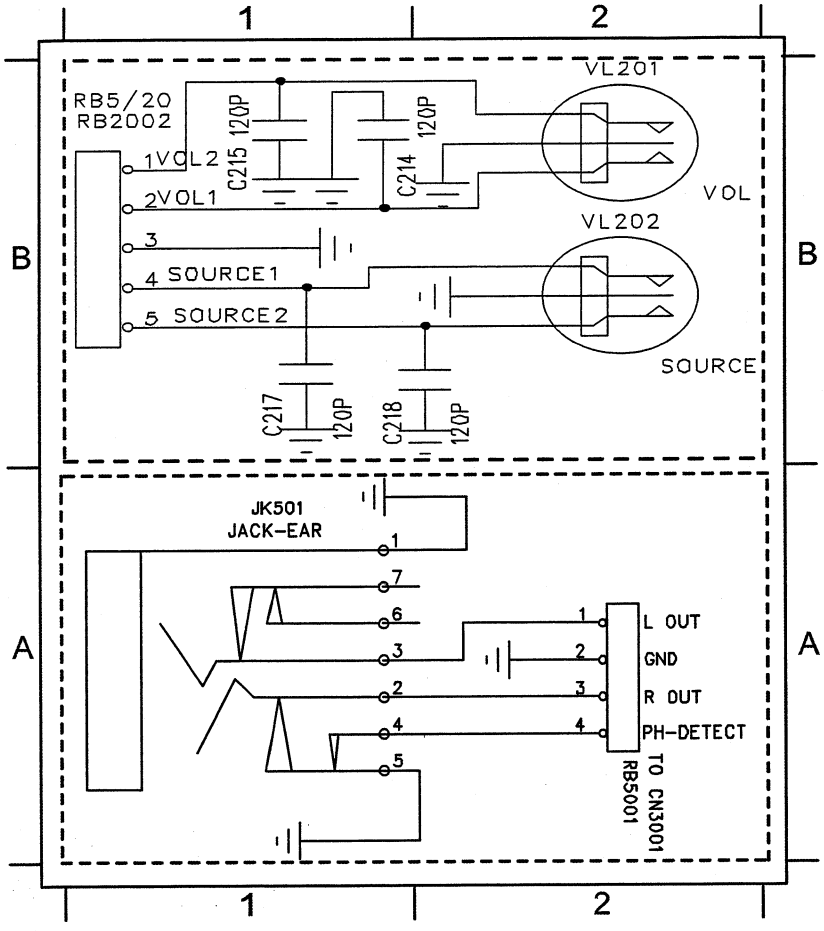
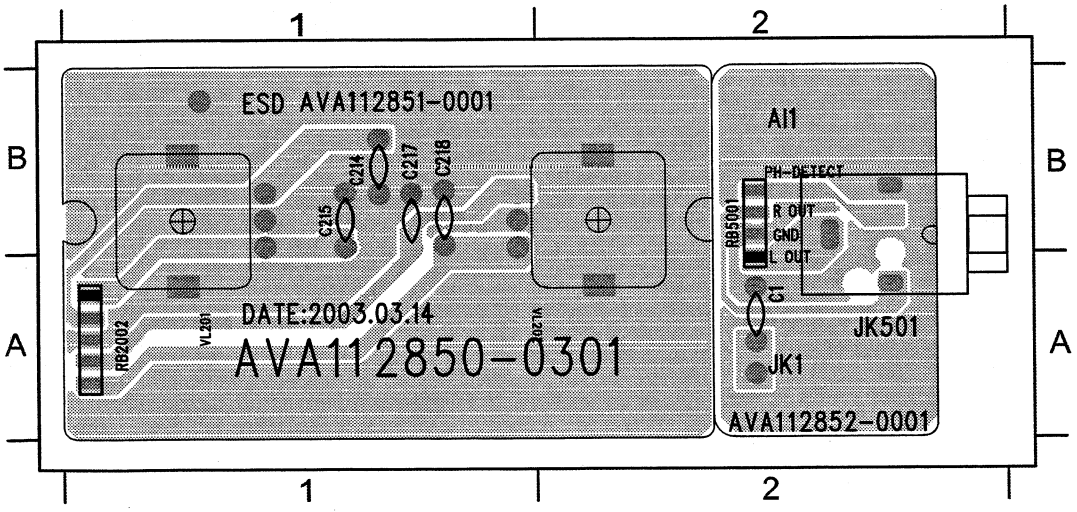
Source + Phone PCB Layout 7-2
Electrical Parts List (Source + Phone) 7-3

CIRCUIT DIAGRAM - SOURCE + PHONE PCB



C214	B 1
C215	B 1
C217	B 1
C218	B 1
JK501	A 1
RB2002	B 1
RB5001	A 2
VL201	B 2
VL202	B 2

PCB LAYOUT - SOURCE + PHONE PCB



C1	A 2
C214	B 1
C215	B 1
C217	B 1
C218	B 1
JK1	A 2
JK501	A 2
RB2002	A 1
RB5001	B 2
VL201	A 1
VL202	A2

ELECTRICAL PARTS LIST - SOURCE & PHONE BOARD

MISCELLANEOUS

	9965 000 24057	SOURCE PCB ASSY
VL202	9965 000 17451	R-ENCODER L20xF7MM P=2.5MM
VL201	9965 000 17793	R-ENCODER L20xF7MM P=2.5MM
	9965 000 24056	PHONE PCB ASSY
JK501	9965 000 24092	PHONE JACK D3.6 7P NICKEL

Note : Only the parts mentioned in this list are normal service spare parts.

POWER BOARD

(For Information only)

It is not recommended for component repair on this board but to replace the board when it becomes defective.
Therefore no service parts list is published in this chapter.

The only service part available for replacement is:
SW POWER SUPPLY ASSY 230V 9965 000 23905

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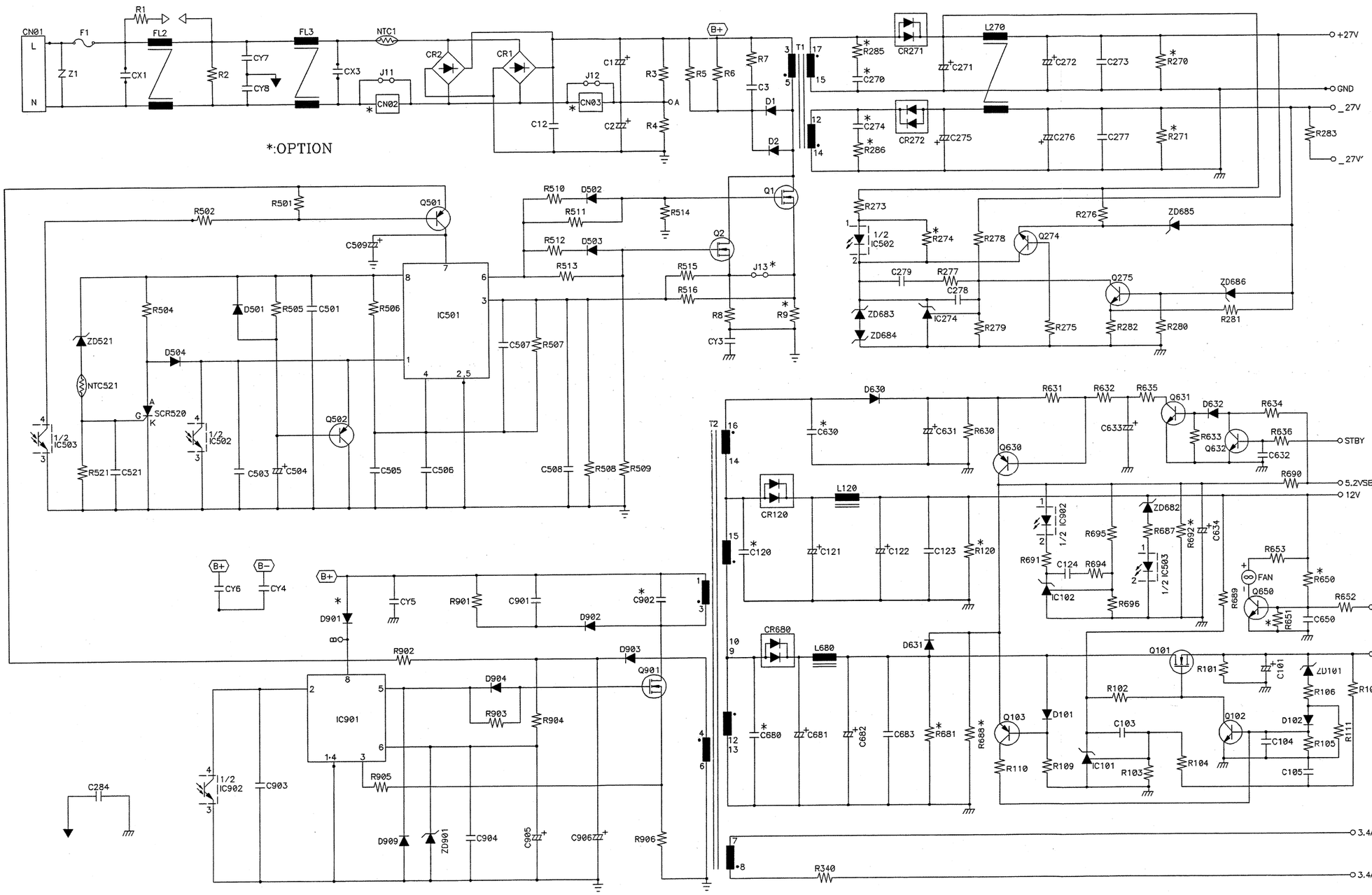
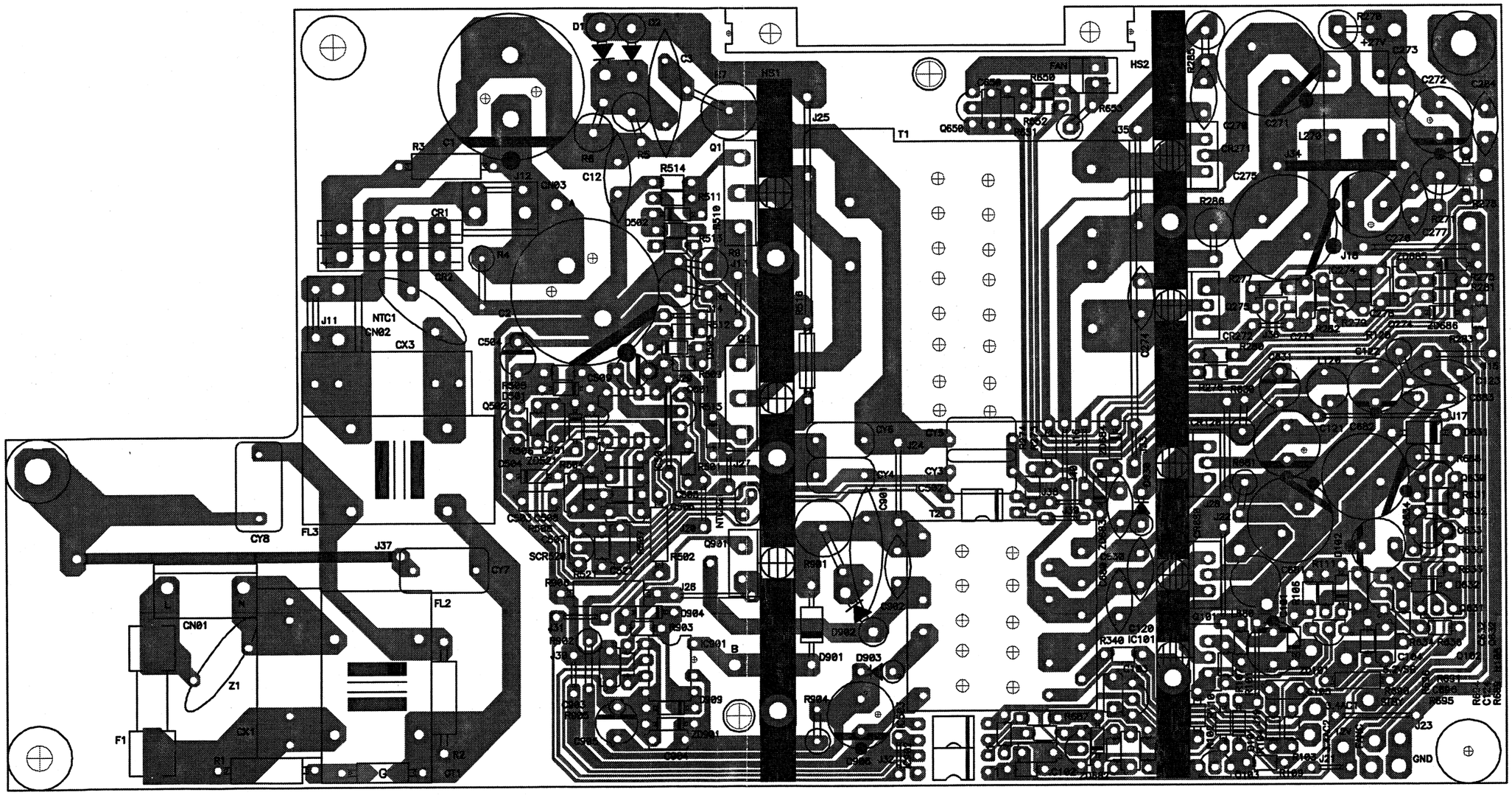
CIRCUIT DIAGRAM - POWER BOARD



8-3

PCB LAYOUT - POWER BOARD



TUNER BOARD

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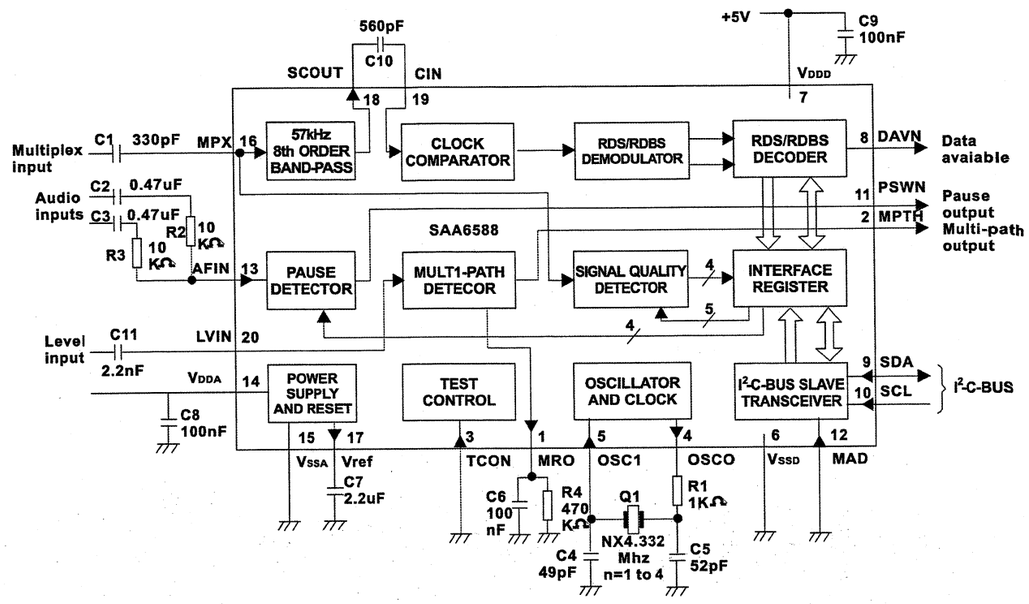
SAA6588T INTERNAL BLOCK DIAGRAM



OPTICAL FUNCTION

IC001 (TEA5762H)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0.4	0	0	0	0	0	0	0.3	0	0	0	0.2	0.2	0	0	0	0	0	0	0
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	0	0	3.3	0	0.5	0	0	3.5	0	0	0	0.2	0.2	0.2	0.2	0.2	0	0	-0.2	0
PIN NO	41	42	43	44																
Voltage	0	0	0	0.1																

IC002 (SAA6588T)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	0	0	0.6	0.6	0	1.3	1.5	4.5	4.5	1.3	1.3	0.8	1.3	0	0.8	0.8	1.3	0.6	0.6

TUNER FUNCTION

IC001 (TEA5762H)

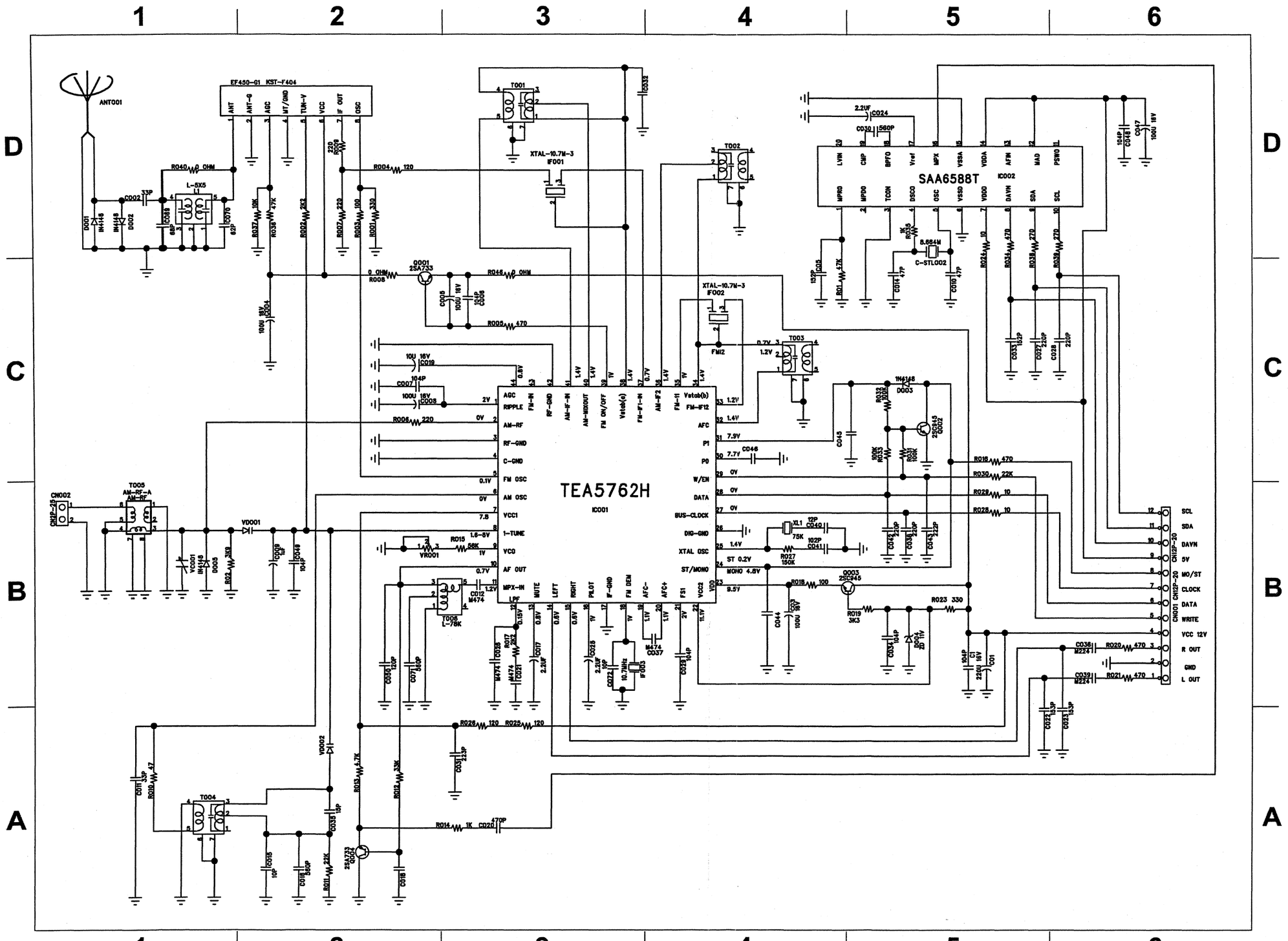
PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	2.1	0	0	0	0	0	7.5	0.6	1.1	0.6	1.1	0.8	0.8	0.6	0.6	0	0	1.1	1.1	1.1
PIN NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	1.5	12	9.6	1.2	1.4	0	0	0.2	0	0	0	1.4	0.8	1.4	0.8	1.4	0.8	1.4	6	1.4
PIN NO	41	42	43	44																
Voltage	1.4	0	0	0.1																

IC002 (SAA6588T)

PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0	0	0	2.3	2	0	4.5	4.5	4.5	4.5	0	4.5	4.5	4.5	0	2.3	2.3	2.3	2.3	2.3

9-2

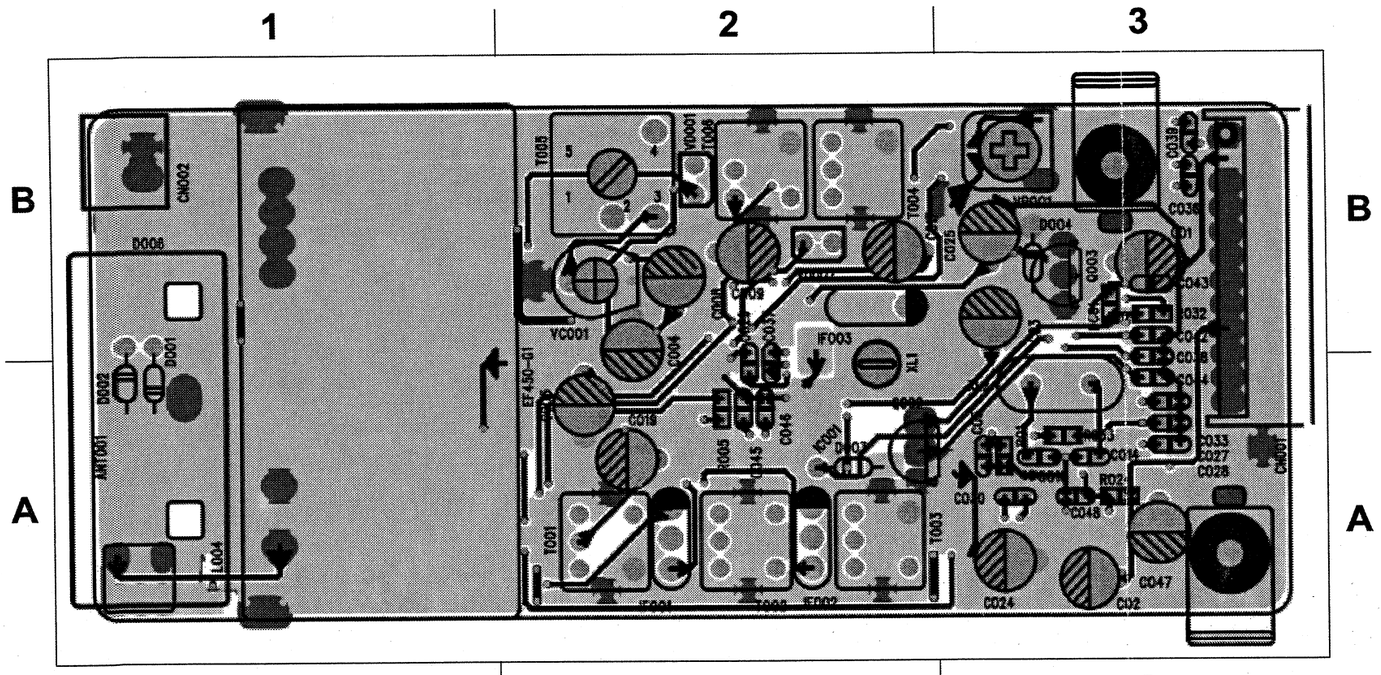
CIRCUIT DIAGRAM



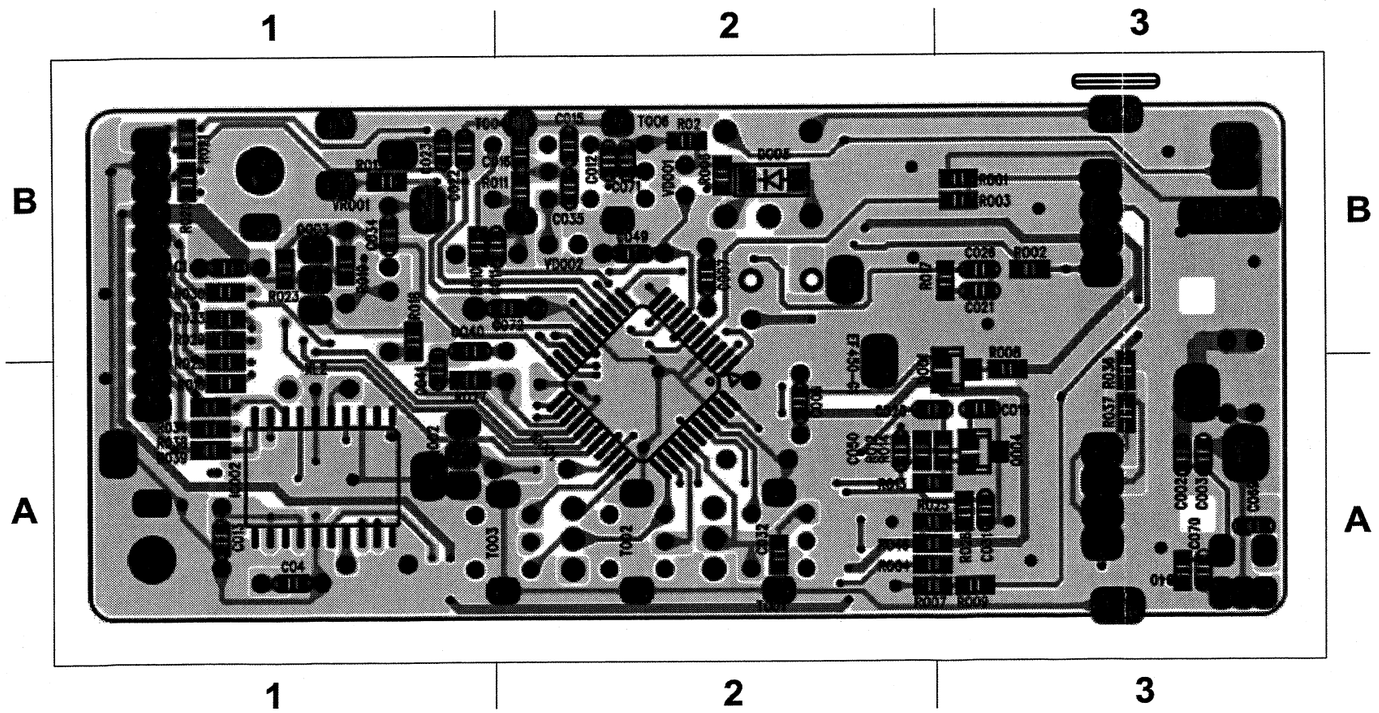
ANT001	D1	IC001	B3
C002	D1	IC002	D5
C004	C2	IF001	D3
C005	C2	IF002	C4
C006	C3	IF003	B3
C007	C2	Q001	C2
C008	C2	Q002	C5
C009	B2	Q003	B4
C01	B5	Q004	A2
C010	C5	R001	D2
C011	A1	R002	D2
C012	B3	R003	D2
C014	C5	R004	D2
C015	A2	R005	C3
C016	A2	R006	C2
C017	B3	R007	D2
C018	A2	R008	C2
C019	C2	R009	D2
C020	A3	R01	C4
C021	B3	R010	A1
C022	A5	R011	A2
C023	A6	R012	A2
C024	D5	R013	A2
C025	B3	R014	A3
C026	B3	R015	B3
C027	C5	R016	C5
C028	B5	R017	B3
C028	C6	R018	B4
C029	B4	R019	B5
C03	B4	R02	B1
C030	D5	R020	B6
C031	A3	R021	B6
C032	D3	R023	B5
C033	C5	R024	C5
C034	B5	R025	A3
C035	A2	R026	A3
C036	B6	R027	B4
C037	B4	R030	C5
C039	B6	R031	C5
C040	B4	R032	C5
C041	B4	R033	C5
C042	B5	R034	C5
C043	B5	R035	D5
C044	B4	R036	D2
C045	C4	R037	D2
C046	C4	R038	C5
C047	D6	R039	C5
C048	D6	R040	D1
C049	B2	R046	C3
C050	B2	R208	B5
C050	C4	R209	B5
C069	D1	T001	D3
C070	D1	T002	D4
C071	B2	T003	C4
C072	B3	T004	A1
C1	B5	T005	B1
CN001	B6	T006	B3
CN002	B1	VC01	B1
C-STL0	C5	VD001	B2
D001	D1	VDD02	A2
D002	D1	VR001	B2
D003	C5	XL1	B4
D004	B5		
D005	B1		

9-3

PCB LAYOUT VIEW



ANT001	A1	C037	B2	D006	B1	T005	B2
C004	B2	C037	B3	IC001	A2	T006	B2
C005	A2	C038	A3	IF001	A2	VC001	B2
C008	B2	C039	B3	IF002	A2	VD001	B2
C009	B2	C042	B3	IF003	B2	VR001	B3
C010	A3	C043	B3	KL2	A3		
C014	A3	C044	A3	L004	A1		
C017	B2	C045	A2	LXL1	A2		
C017	B3	C046	A2	Q002	A2		
C019	A2	C047	A3	Q003	B3		
C02	A3	C048	A3	R005	A2		
C024	A3	C05	A3	R01	A3		
C025	B3	C31	B3	R024	A3		
C027	A3	CN001	A3	R032	B3		
C028	A3	CN002	B1	R033	A3		
C029	B2	D001	B1	T001	A2		
C030	A3	D002	A1	T002	A2		
C033	A3	D003	A2	T003	A2		
C036	B3	D004	B3	T004	B2		



C002	A3	C071	B2	R015	B1	T004	B2
C003	A3	C072	B2	R018	B1	T006	B2
C006	A2	C1	B1	R018	A1	VD001	B2
C007	B2	D005	B2	R019	B1	VD002	B2
C012	B2	EF450-G1	A2	R02	B2	VR001	B1
C013	A1	IC001	A2	R020	B1	XL2	A1
C015	B2	IC002	A1	R021	B1		
C016	B1	Q001	A2	R023	B1		
C018	A3	Q002	A1	R025	A2		
C020	A2	Q003	B1	R026	A3		
C021	B3	Q004	A3	R027	A1		
C022	B1	Q017	B2	R028	A1		
C023	B1	R001	B3	R029	B1		
C026	B3	R002	B3	R030	B1		
C031	A3	R003	B3	R033	B1		
C032	A2	R004	A2	R034	A1		
C034	B1	R006	B2	R036	A3		
C035	B2	R007	A2	R037	A3		
C04	A1	R008	A3	R038	A1		
C040	B1	R009	A3	R039	A1		
C041	A1	R010	B1	R040	A3		
C049	B2	R011	B1	R046	A2		
C050	A2	R012	A2	T001	A2		
C069	A3	R013	A2	T002	A2		
C070	A3	R014	A2	T003	A1		

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ELECTRICAL PARTS LIST - TUNER BOARD

MISCELLANEOUS

ANT001	9965 000 17361	RF JACK FEMALE TYPE ID1.44MM
CN002	9965 000 15855	CONNECTOR S2B-XH-A 2P
EF450-G1	9965 000 19410	TUNER PACK KST-F404HA-2B (EU)
IF001	9965 000 24093	CER FILTER 3P 10.7MHz LT10.7MA5
IF002	9965 000 15868	CER FILTER 10.7MHz
IF003	9965 000 24094	CER FILTER JT10.7MC1 10.7MHz 2P
T001	9965 000 22254	AM IFT 450kHz 180pF
T002	9965 000 22255	AM IFT 450kHz 180pF
T003	9965 000 22255	AM IFT 450kHz 180pF
T004	9965 000 22253	OSC COIL AM 120uH (796kHz)
T005	9965 000 15874	ANT OSC AM 4-6:10T 1-3:86T
T006	9965 000 15877	BIAS COIL 78kHz
VC001	9965 000 15866	COND TRIM 4.2 - 20 PF N450
VR001	9965 000 23890	CNTL TRIMR 50KB 30%
XL1	9965 000 23588	CRYSTAL 75kHz +/-15 PPMCOLUMN
XL1	9965 000 23918	CRYSTAL 75kHz 20 PPM
XL2	9965 000 24095	CRYSTAL 8.664MHz HC-49/S
XL2	9965 000 23919	CRYSTAL DY8.664MHz HC-49US

DIODES

D001	4822 130 30621	1N4148
D002	4822 130 30621	1N4148
D004	9965 000 16337	DIODE ZENER 11.1 - 11.6V 0.5W
D005	9965 000 19409	DIODE CHIP BAV16W/IN4148W
VD001	4822 130 81673	1SV149
VD002	4822 130 81673	1SV149

TRANSISTORS & INTEGRATED CIRCUITS

Q001	9965 000 14175	2SA733Q,P
Q002	4822 130 41198	2SC945P
Q003	4822 130 41198	2SC945P
Q004	9965 000 14175	2SA733Q,P
IC001	9965 000 23920	IC 44P TEA5762H QFP44 PHILIPS
IC002	9965 000 23921	IC 20P SAA6588T SO20 PHILIPS

Note : Only the parts mentioned in this list are normal service spare parts.

10-2

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

1	9965 000 17343		DISPLAY LENS
2	9965 000 17344		SOURCE LENS
3	9965 000 24061		SOURCE KNOB
4	9965 000 24062		VOLUME KNOB
5	9965 000 17346		LENS-2
6	9965 000 17347		LENS-3
7	9965 000 24063		FRONT CABINET
8	9965 000 17339		FUNCTION KEY
9	9965 000 17338		FUNCTION KEY BRACKET
16	9965 000 17355		SPACER
17	9965 000 24064		RUBBER FOOT
20	9965 000 17356		PLASTIC BRACKET
21	9965 000 17354		SPACER
26	9965 000 23653		DC FAN 12V 0.09A 4000RPM
31	9965 000 24065		SURROUND KEY
33	9965 000 12424		PHILIPS LOGO
34	9965 000 24066		POWER KEY COVER
35	9965 000 17341		POWER KEY
36	9965 000 17345		LED LENS
43	9965 000 23905		SW POWER SUPPLY ASSY 230V
46	9965 000 12443	⚠	AC SOCKET
47	9965 000 23575		ANTENNA HOLDER
	9965 000 24067		BEAD FERIT OD25XID15XH10MM
	9965 000 24068	⚠	LINE CORD 2P 2000MM BLK
	9965 000 14632		FM ANTENNA
	9965 000 14633		LOOP ANTENNA
	9965 000 23889		RCA CABLE 1500MM BLK
	9965 000 24069		RCA CABLE 1500MM BLK
	9965 000 23656		REMOTE CONTROL
	9965 000 24070		SATELLITE SPEAKER 75Wx6 4R
	9965 000 24071		SUBWOOFER SPEAKER 150W 6R
	9965 000 23900		TUNER PCB ASSY
11	9965 000 24056		PHONE PCB ASSY
14	9965 000 24057		SOURCE PCB ASSY
11+14	9965 000 24058		SOURCE+PHONE PCB ASSY
25	9965 000 24059		MAIN PCB ASSY
39	9965 000 24060		KEY CTRL+POWER SW PCB ASSY

Satellite Speaker Breakdown

9965 000 24096	SPEAKER BOX FRONT-L
9965 000 24097	SPEAKER BOX FRONT-R
9965 000 24098	SPEAKER BOX REAR-L
9965 000 24099	SPEAKER BOX REAR-R
9965 000 24100	SPEAKER BOX REAR-C
9965 000 24101	SPEAKER BOX CENTER
9965 000 21045	TERMINAL COVER (FRONT/REAR)
9965 000 21046	RUBBER WASHER (TERMINAL COVER)
9965 000 24102	RUBBER FOOT (CENTER)
9965 000 24103	GRILLE ASSEMBLY (CENTER)
9965 000 17046	PHILIPS LOGO

Note : Only the parts mentioned in this list are normal service spare parts.

10-1

EXPLODED DRAWING